DISHWASHER

SERVICE MANUAL

NOTE

BEFORE SERVICING THE UNIT, PLEASE READ THIS MANUAL CAREFULLY
FOR SAFETY AND CORRECT SERVICES.

MODEL : LDS4821(WW,BB,ST)

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CAUTION !

■DISCONNECT POWER CORD BEFORE SERVICING

■RECONNECT ALL GROUNDING DEVICES

IMPORTANT SAFETY NOTICE !

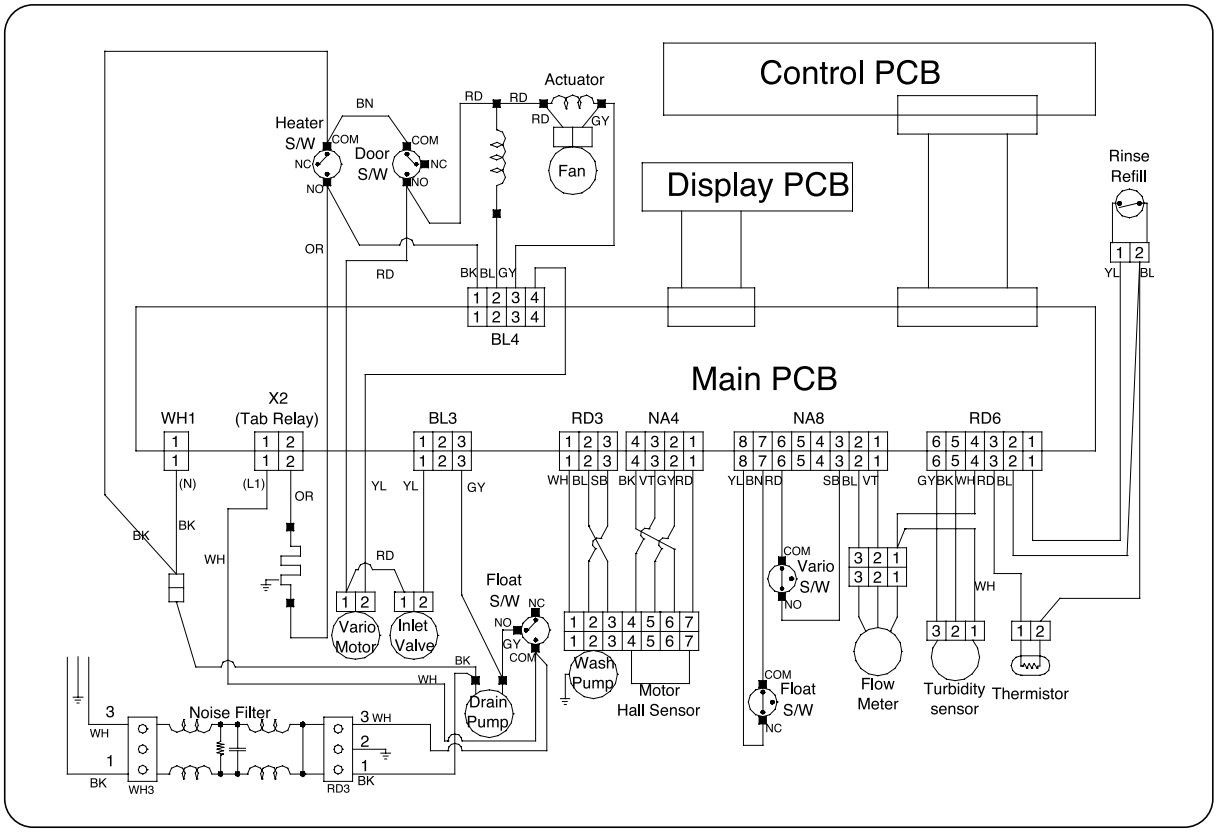
This service information is intended for individuals possessing adequate backgrounds of electrical, electronic and mechanical experience.
Any attempt to repair this appliance may result in personal injury and property damage.
The manufacturer or seller can not be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

2. SPECIFICATION

ITEM	SPECIFICATION
Rated Voltage / Frequency	AC 120V/60Hz
Installation	Built-In
Place Settings	16
Product Dimension(in)	23 3/4″ x 24 5/8″ x 33 1/2″
Product Weight(lbs)	89lbs
Door Color	White, Black, Stainless
Tub Material	Stainless Steel
Control	Electronic
Rated Power(Watt)	1,350
Heater Power(Watt)	1,200
Programs	4
Upper Rack Position	manual
Lower Rack	Fixed Tines
Water Consumption(ℓ)	10-26 (Normal)
Power Consumption(kWh/year)	285-310
Operating Time (min)	101-135 (Normal)
Fan Dry System	Yes
Delay Start Function	No
Auto-Off Power Switch	Yes
Process Monitor	Yes
Wash Level	5
Racks	Nylon Coating
Operating Water Pressure (Bar)	20-120 (140-830kPa)

3. WIRING DIAGRAM

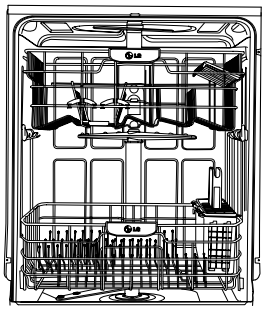
LDS4821 serise



4. FEATURES & TECHNICAL EXPLANATION

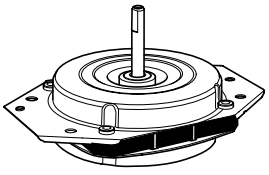
4-1. Product Features

■ Ultra Big Capacity



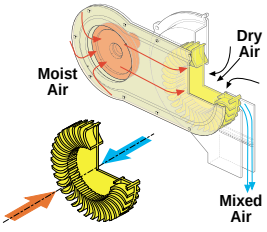
If you raise the Upper Rack, you can load large dishes in the Lower Rack. (Max. 14 in.)
The tall tub provides large dishes loading as well as large capacity.
LG dishwashers let you load oversized items in the Lower and Upper Rack.

■ Slim Direct Motor™



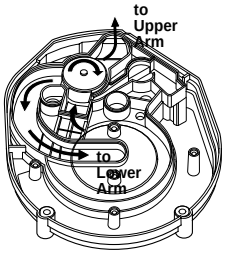
Newly introduced Slim Direct Inverter motor is inverter-controlled. Speed is controlled based on program selection. It also offers high energy efficiency to minimize energy loss.

■ Hybrid Drying System



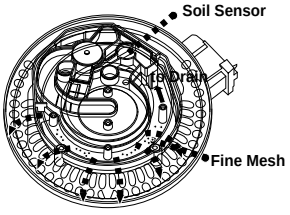
This is one of the best performance solutions for drying dishes because it minimizes venting humid air to the outside of the dishwasher. In addition, this system ensures better drying results compared to the condensing drying system.

■ Vario Spray System



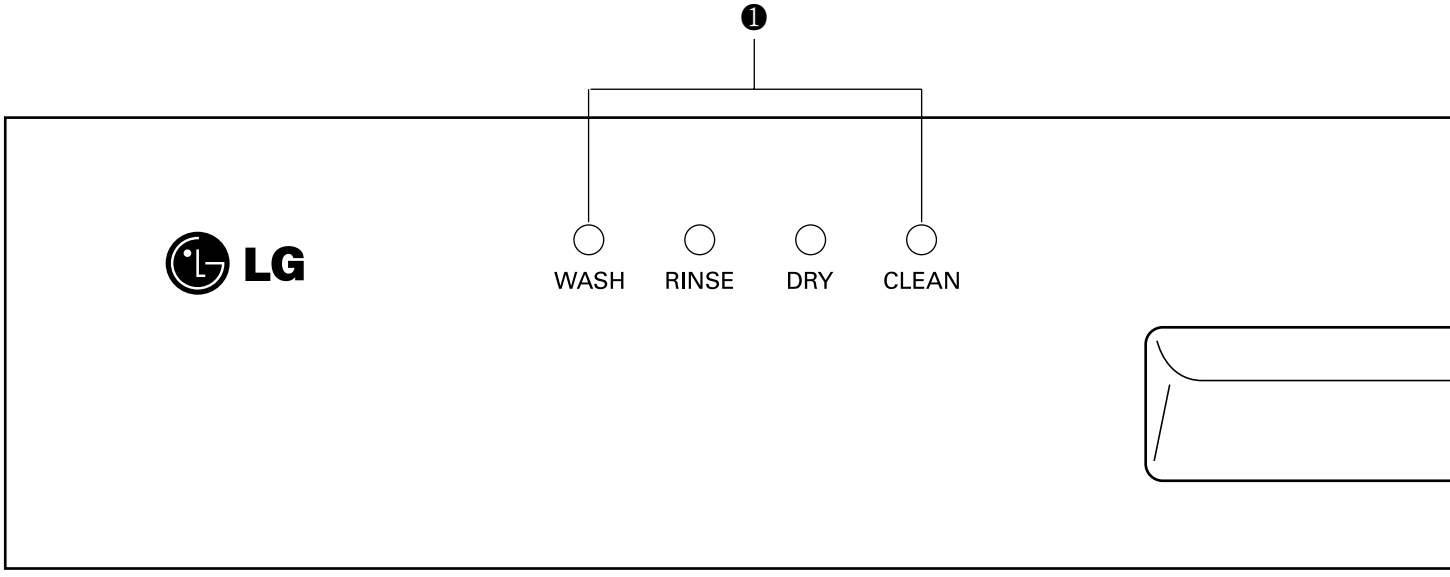
Because of alternating water spray between the Upper and Lower Rack, the water pressure allows superior performance and reduced consumption of water and electricity.

■ Self Cleaning Filter



For best wash results, the self-cleaning filter system continuously cleans the water as it circulates. Your LG dishwasher has a self-cleaning filter that grinds food into small particles before it goes down the drain.

4-2. Display Panel LDS 4821 Series



❶ PROCESS INDICATOR (SignaLight ™)
- Current program phase is indicated.

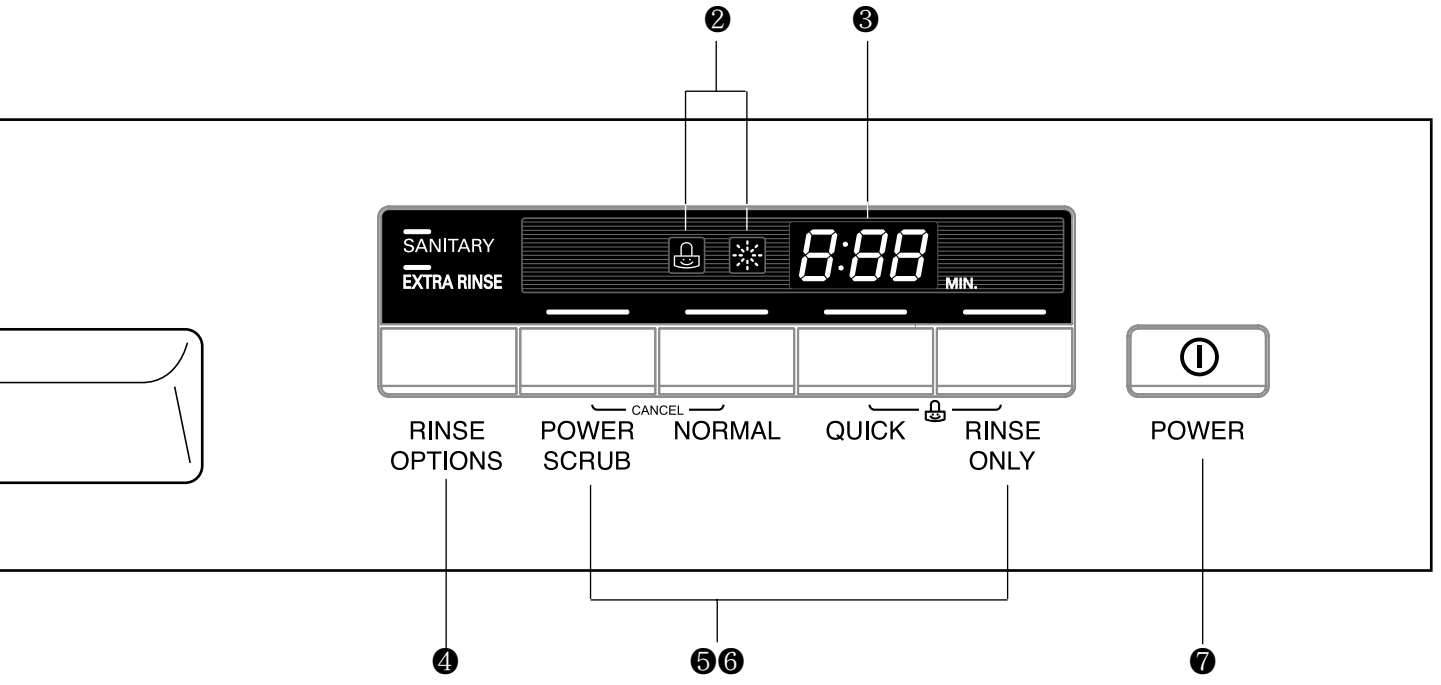
❷ INDICATOR
- Child Lock( ): Lamp will turn on when Child Lock setting is on.
- Rinse Aid( ): Refill with rinse aid when Lamp turns on.

❸ TIME REMAINING
- Indicates normal run time for the cycle selected.
- During the cycle, the estimated time remaining for the selected cycle will be displayed.

❹ RINSE

Repeated pressing of the Rinse button will select Sanitary, Extra Rinse or both.
- If you select the Sanitary Function, Sanitary Light blinks when the water temperature meet sanitary Temp. and illuminates at the end of cycle when Conditions have been met to achieve sanitization.
- When you select Extra Rinse, an additional rinse cycle is added.

NOTE ***These high temperature rinse sanitizes dishware and glassware in accordance with NSF/ANSI Standard 184 for Residential Dishwashers. Certified residential dishwashers are not intended for licensed food establishments.***



❺ PROGRAM

• Press the program that corresponds to your desired wash cycle.

POWER SCRUB	This program is for very heavily soiled loads.
NORMAL	This program is for normally soiled, every loads.
QUICK	This program is for that quick wash of lightly soiled, recently used dishes and cutlery.
RINSE ONLY	This program is for just a quick rinse dishes. No detergent is used.

❻ CANCEL & CHILD LOCK

• To cancel a running cycle, open the door, then press and hold the POWER SCRUB and NORMAL buttons together for 3 seconds. The drain pump will be activated and the cycle will be canceled.
• To lock/unlock the buttons, press QUICK and RINSE ONLY simultaneously for 3 seconds. When CHILD LOCK is set, all buttons are disabled.

❼ POWER

Pressing the POWER button turns on power to the control.

• After the cycle is complete, the power automatically switches off after 4 minutes for safety and economy.
• If there is an unusual Power surge or disturbance, the power will be automatically turned off for safety and the cycle will have to be started over.

NOTE ***Only sanitary cycle have been designed to meet the requirements of performance for soil removal and sanitization efficacy. There is no intention, either directly or indirectly, that all cycle on a certified machine have passed the sanitization performance test.***

4-3. TEST MODE LDS4821 Series

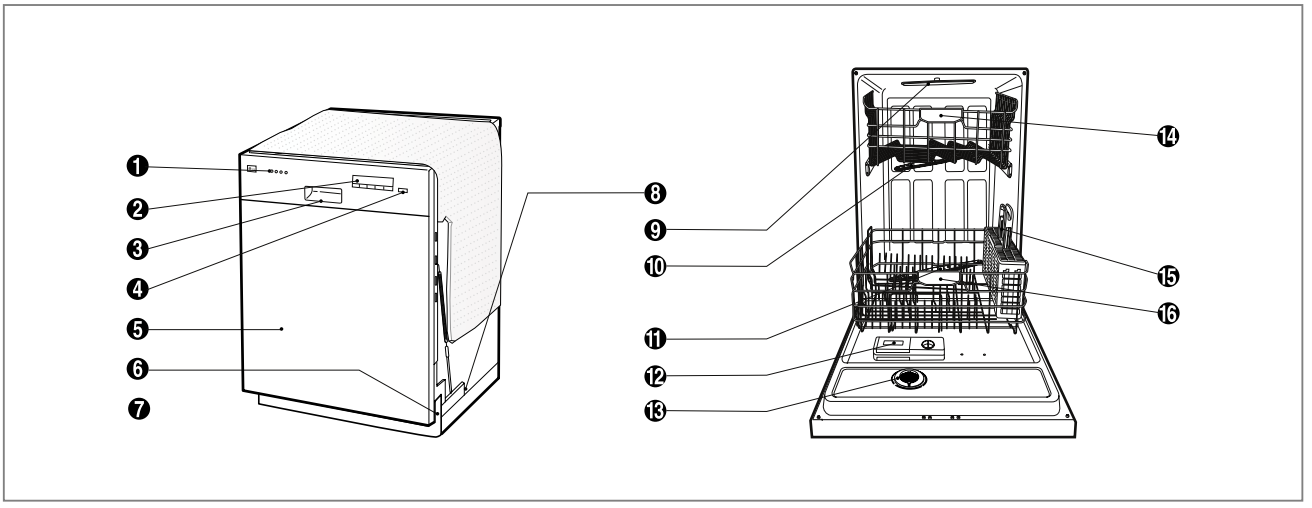
CHECK PROGRAM

BUTTON	The number of pushing button	Top Display	Load and Checking points	Door open/ closed
RINSE+NORMAL +POWER S/W	1 TIME	n : 3H/U00	All LEDs are lighting	Both
POWER SCRUB	1 TIME	1:11	All LEDs are lighting	Both
NORMAL	1 TIME	2:22	All LEDs are lighting	Both
QUICK	1 TIME	3:33	All LEDs are lighting	Both
RINSE ONLY	1 TIME	4:44	All LEDs are lighting	Both
RINSE	1 TIME	Soil Level	Soil Sensor	Both
	2 TIME	n:32	Wash Pump	Closed
	3 TIME	n:33	Drain Pump	Closed
	4 TIME	①Frequency	Inlet Valve	Both
	5 TIME	n:35	Dispenser	Closed
	6 TIME	n:36	Heater (for 10 sec)	Closed
	7 TIME	n:37	Fan	Closed
	8 TIME	n:38		
	9 TIME	Temp.(℃)	Thermistor	Both
	10 TIME	n:3a	Lower Nozzle(VARIO)	Closed
	11 TIME	n:3b	Upper Nozzle(VARIO)	Closed
	12 TIME	n:3c	Auto-Off(Wash-Drain-Water Supply)	Closed

① Normal Water Level : 270

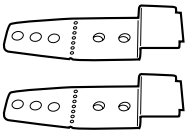
5. PARTS NAME

5-3. LDS 4821 Series



❶ Control Panel
❷ Front Display
❸ Door Handle
❹ Power Button
❺ Front Cover
❻ Lower Cover
❼ Leveling Foot
❽ Base
❾ Top Spray Arm
❿ Upper Spray Arm
⓫ Lower Spray Arm
⓬ Detergent & Rinse Aid Dispenser
⓭ Vapor Vent Cover
⓮ Upper Rack
⓯ Cutlery Basket
⓰ Lower Rack

Accessories



INSTALL BRACKET

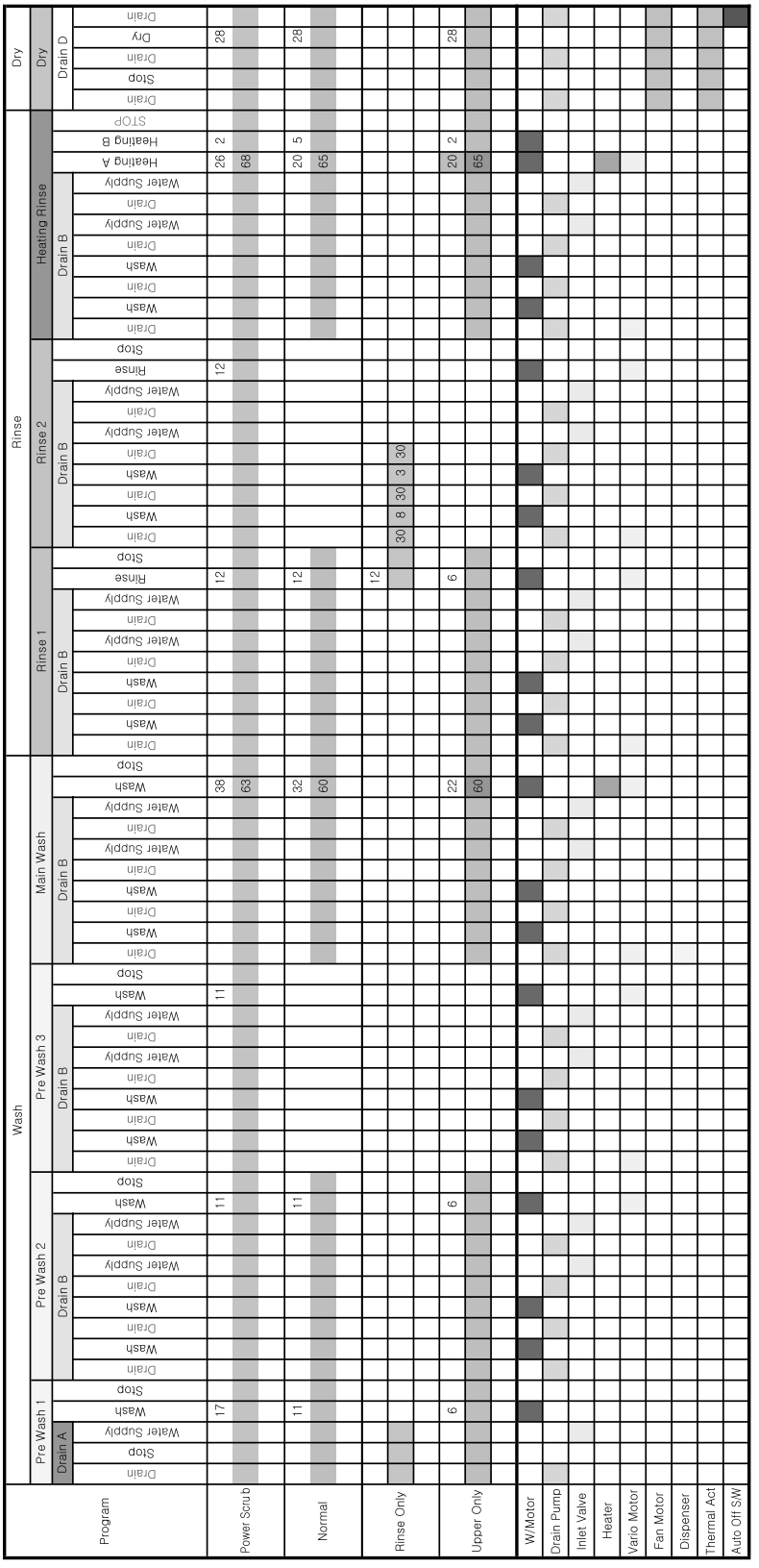
WOOD SCREW

※ The appearance and specifications may be varied without notice according to localities.

6. PROGRAM CHART(SCHEMATIC DIAGRAM)

LDS 4821 Series

Program chart

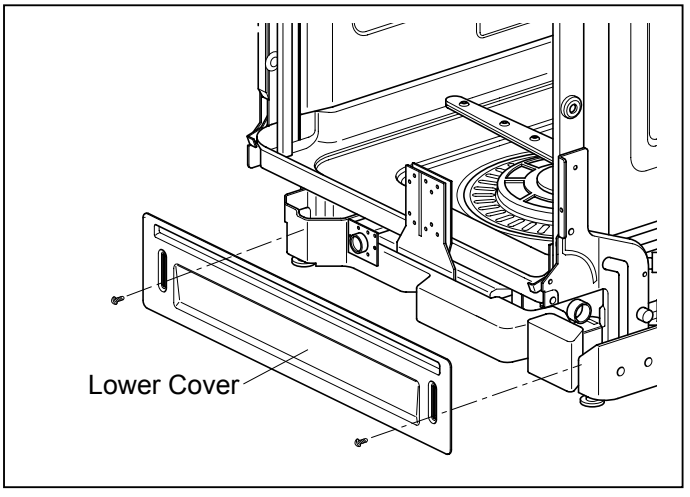


7. HOW TO DISASSEMBLE

BEFORE DISASSEMBLING THE DISHWASHER ;

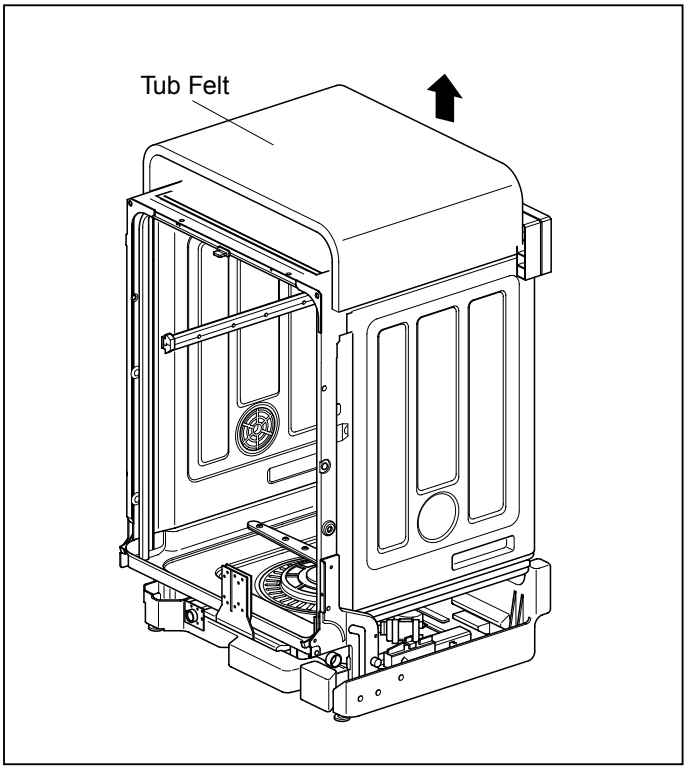
1) Remove the cord from electric outlet to avoid electric shock.
2) Close the Water Tap (faucet).
3) Remove all dishes and items in the dishwasher.
4) Remove the Lower Rack and the Upper Rack.
5) Remove the inlet hose and drain hose connetion to avoid the hose damages.
6) Prepare some towels to avoid floor wet by the water left in the dishwasher.

7-1. FULL DISASSEMBLE



1. Lower Cover and Lower Felt

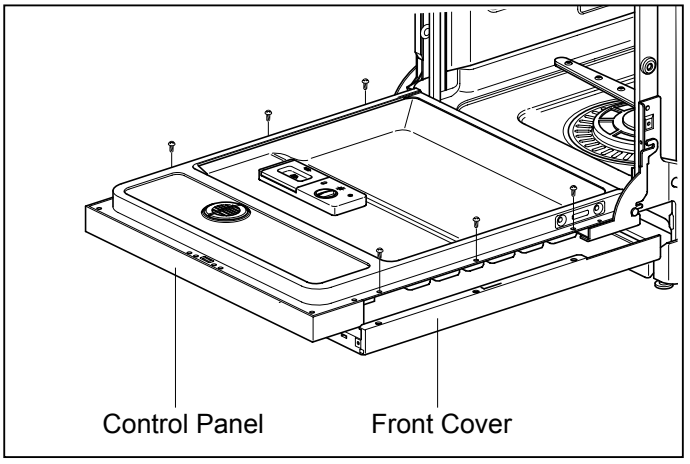
1) Remove the front 2 screws.
2) Remove the Inlet Hose and Power Supply Cable.

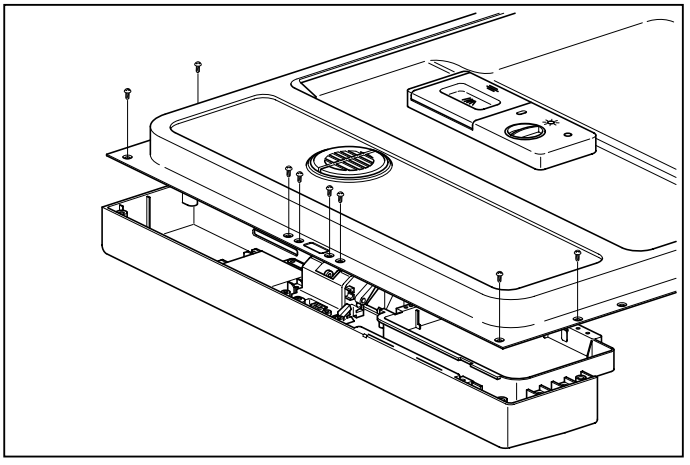


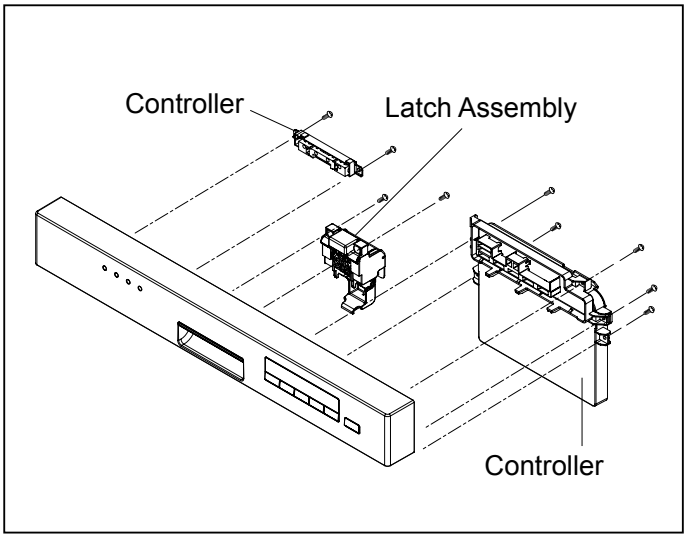
2. Tub Felt

1) **Tub Felt**

① Pull the Tub Felt.







3-1. Door Assembly

1) Front Cover

① Open the door.

② Remove 6 screws(stainless).

2) Control Panel Assembly

① Remove 8 screws(Stainless).

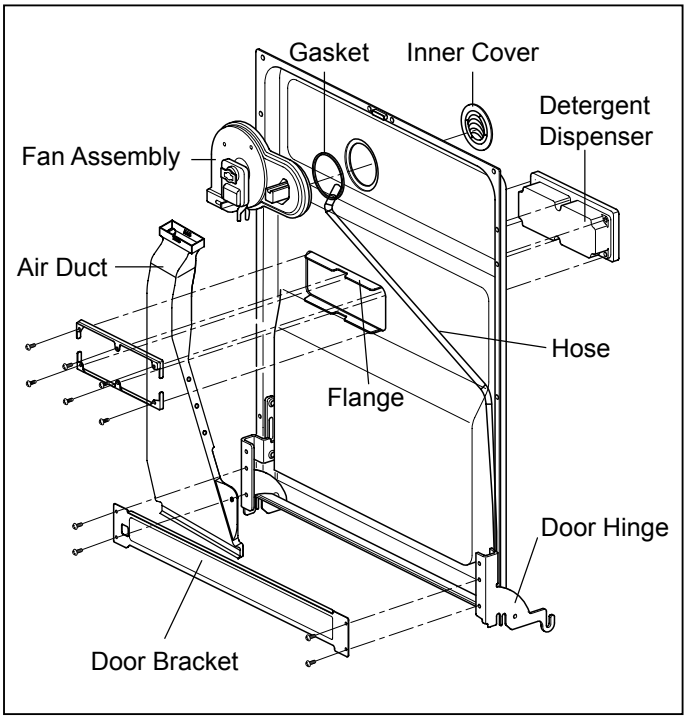
②Remove the wire connections.

Be sure the wiring should not be changed in reassembling

③ Remove the Latch assembly.

④ Remove the Front Display.

⑤ Remove 8 screws for Controller.



3) Fan Assembly

① Open the door.

② Remove 4 screws and a earth screw for Door Bracket.

③ Remove the wire connetions.

④ Remove the Air Duct.

⑤ Turn the Inner Cover counterclockwise.

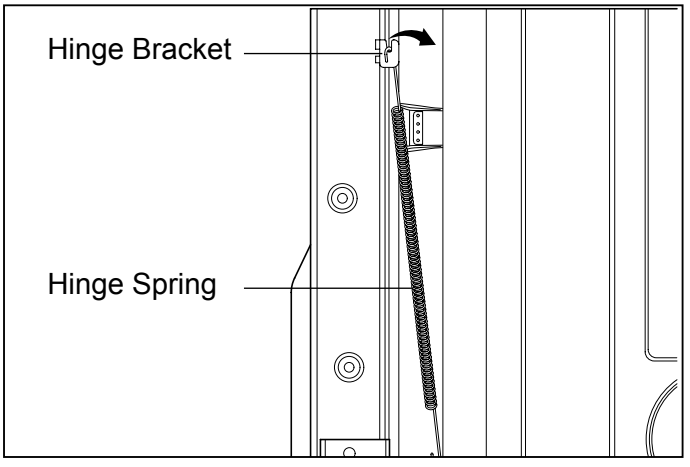
4) Detergent Dispenser

① Close the door

② Remove the wire connections.

③ Remove 6 screws with brackets.

④ Push the Detergent slowly pulling up the the Flange by Standard Screwdriver.

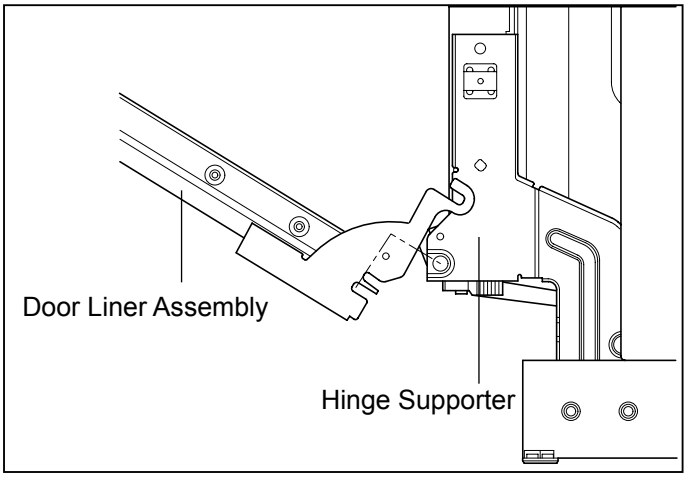


5) Door Spring (Right & Left)

① Push the Spring upwards and take it off from the Hinge Bracket.

Be careful not to be injured by the sharpedge of Tub.

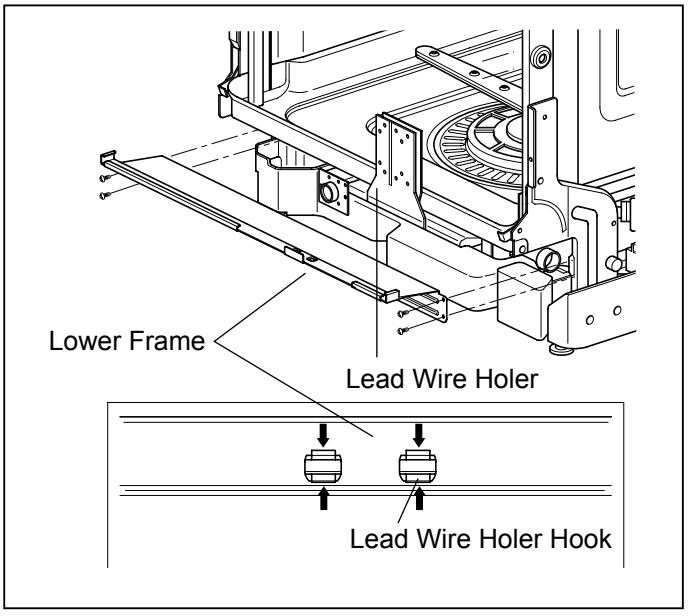
② Take off the Hinge Link from the Hinge.



6) Door Liner

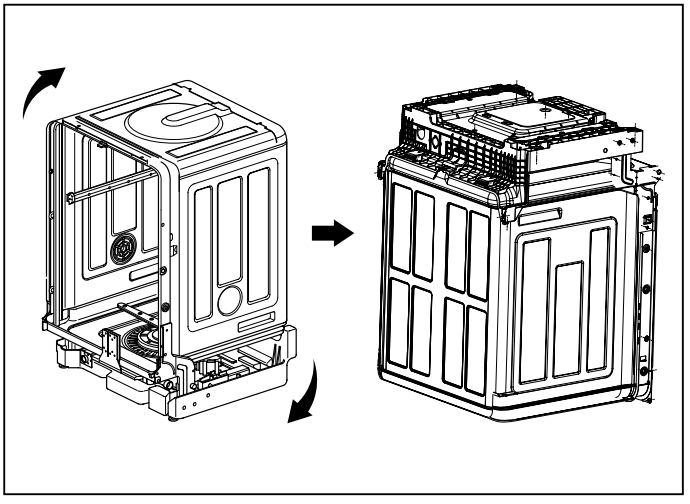
① Open the door.

② Pull the Door Liner and take it off from the Hinge Supporter.

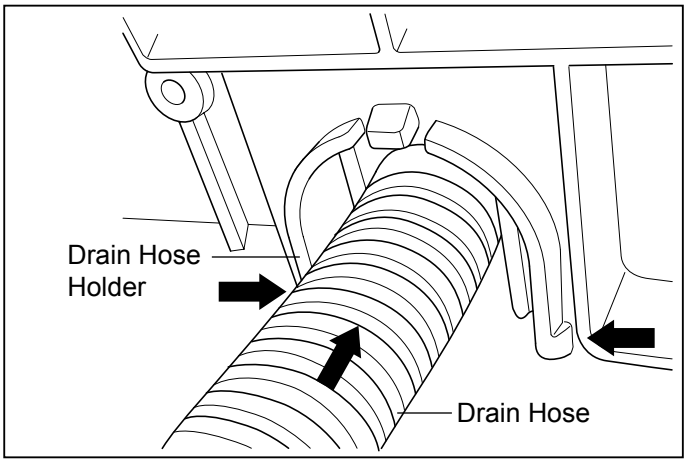


4. Lower Frame

1) Press the holder hook as shown in figure.
2) Remove 4 screws.

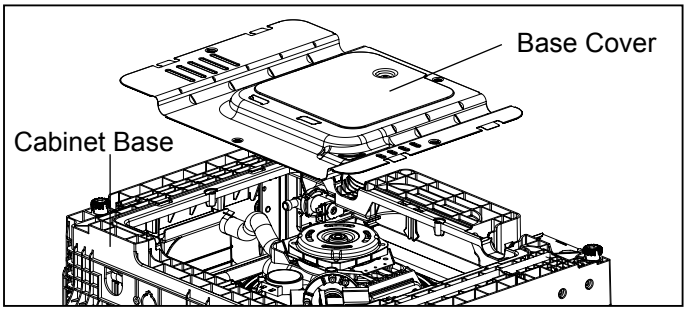


5. Put the Dishwasher upside down.



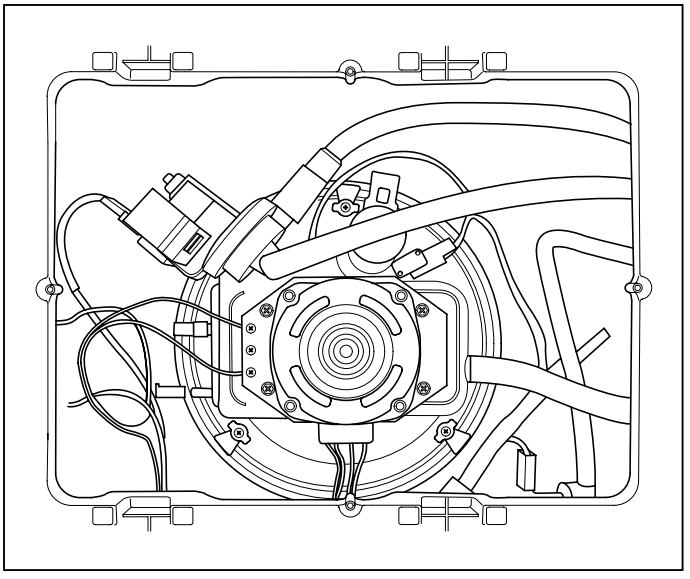
6. Drain Hose Holder

1) Press the holder hook as shown in figure.
2) Pull the Drain Hose and remove the Drain Hose Holder.



7. Base Cover

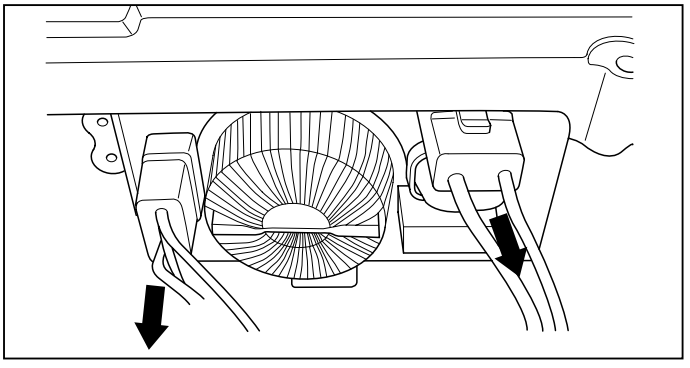
1) Remove 2 screws.
2) Pull the Base Cover out.

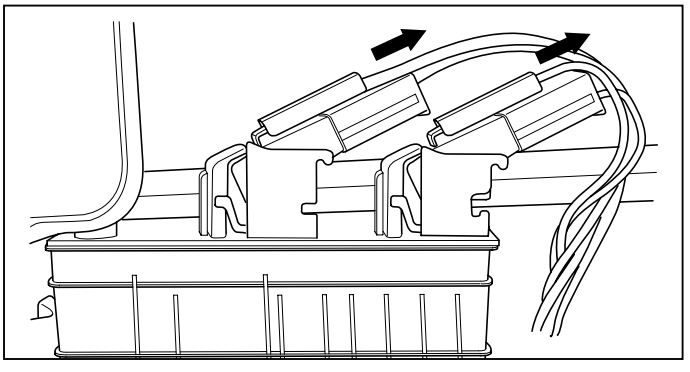


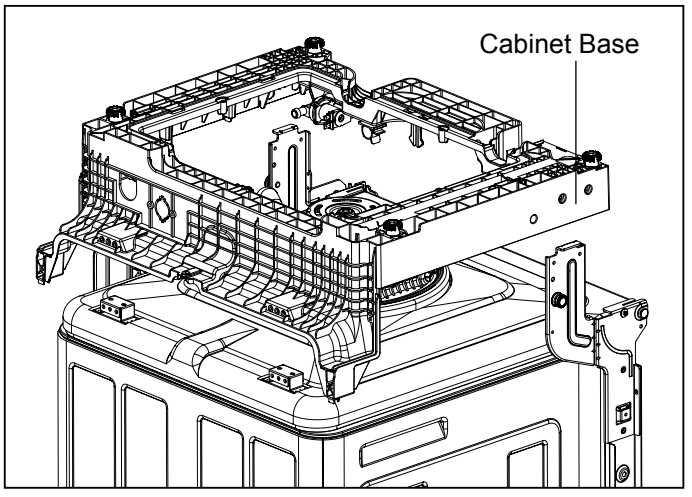
8. Harness & Hose Assembly

1) Remove the wiring connections.
2) Remove the Hose connections from Sump Assembly.

You can see the information of Wiring Diagram at the back of Lower Cover.

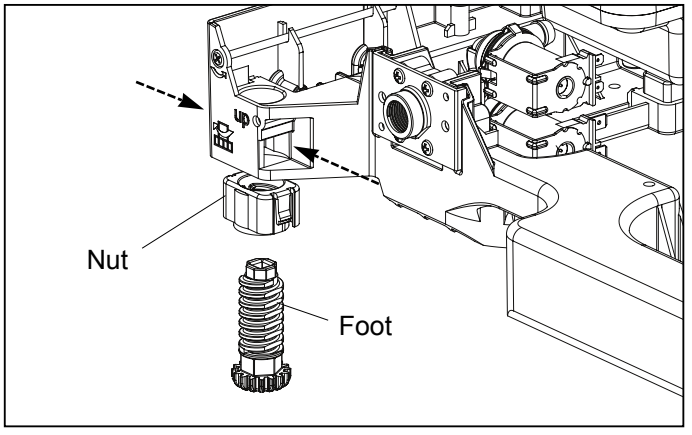






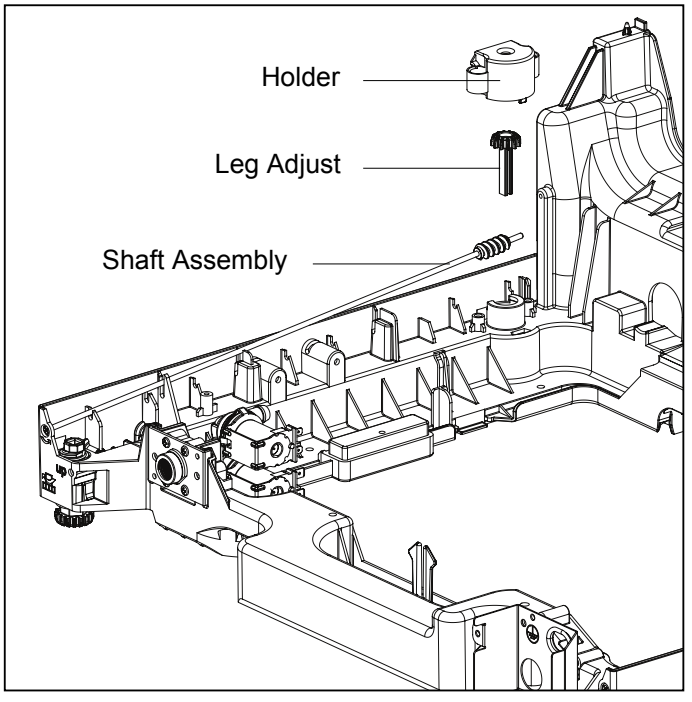
9. Cabinet Base

1) Remove 8 screws.
2) Lift it upward.



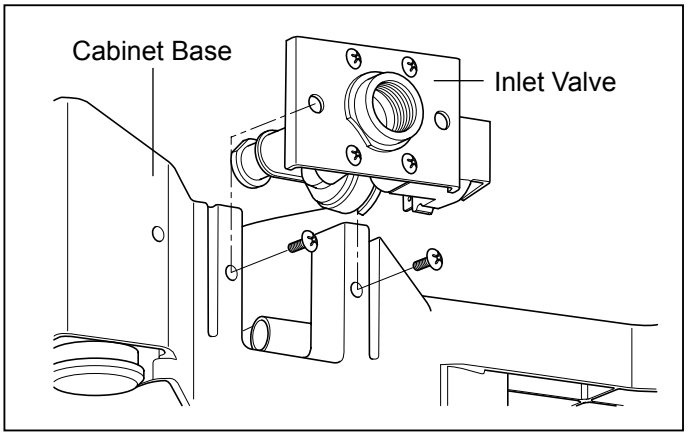
10. Foot & Nut

1) Pull the Foot twisting
2) Pull the Nut pushing the hook.



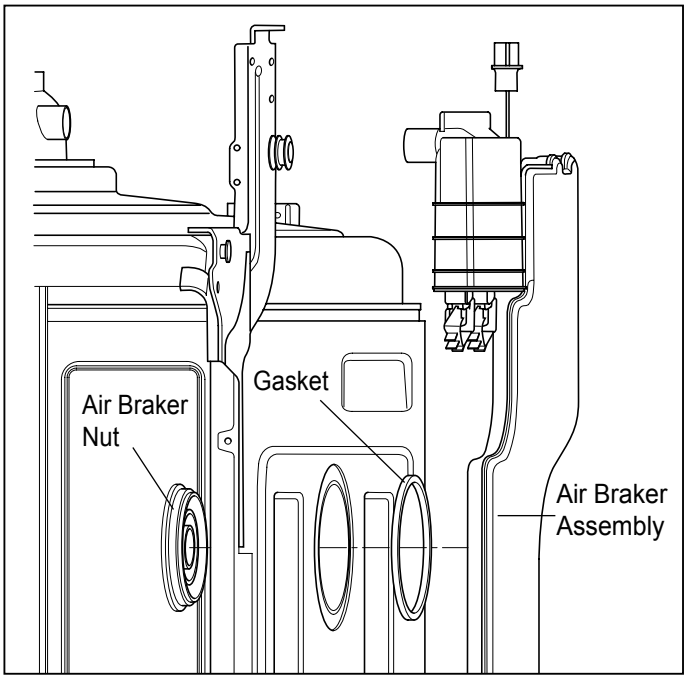
11. Rear Leg Adjustment System

1) Remove 2 screws.
2) Pull the Holder.
3) Pull the Leg Adjust.
4) Pull the Shaft Assembly.



12. Inlet Valve

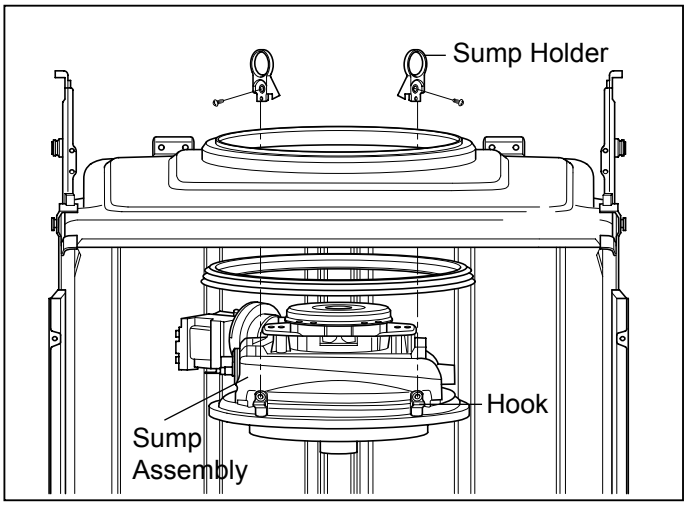
1) You can disassemble the Inlet Valve by removing the 2 screws.



13. Air Braker Assembly

1) Disconnect the 3 hoses assembly.
2) Turn the Air Braker Nut counterclockwise.

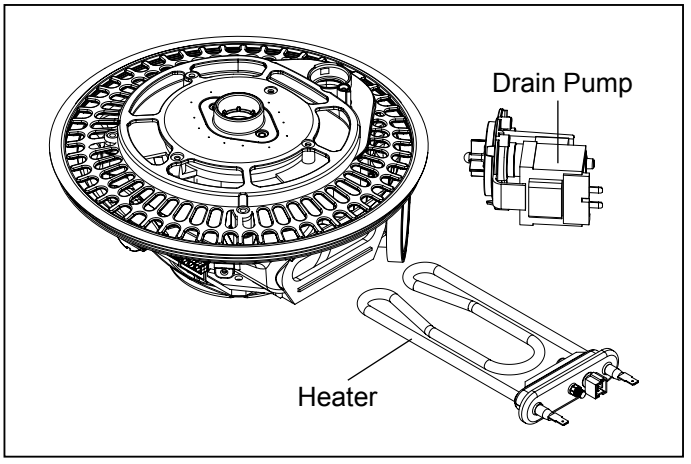
Be careful the o-ring should not be lost.



14. Sump Assembly

① Remove 2 screws.
② Remove the Sump Holder and push the Sump Assembly down with pulling aside Hook.

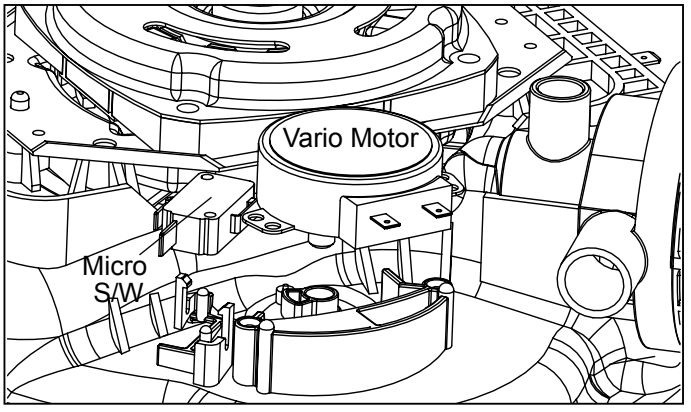
Be careful not to drop the Sump Assembly to the bottom.



1) Heater & Drain Motor

① Pull the Heater out of the Sump after releasing the nut.

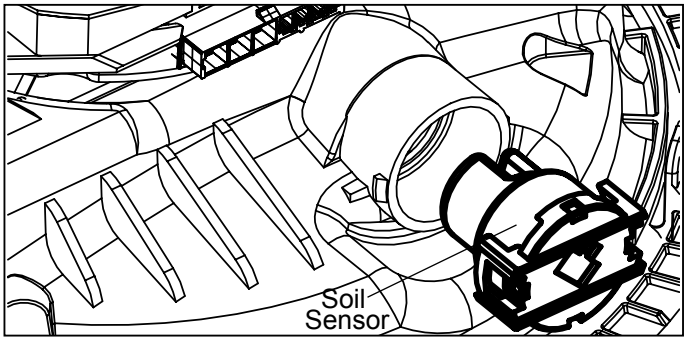
② Remove 3 screws.



2) Vario Motor

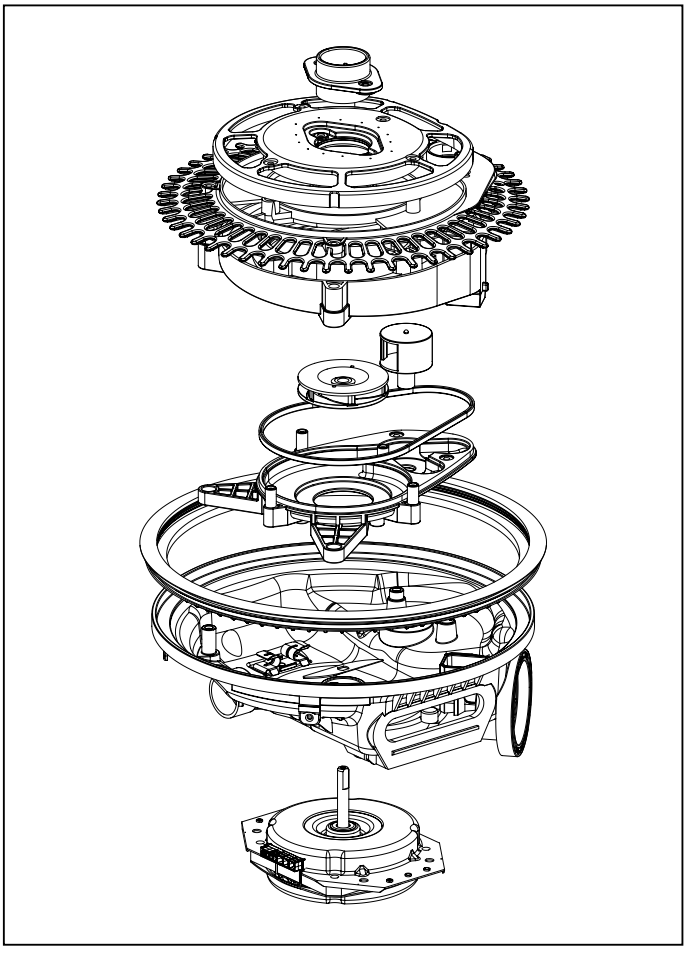
① Remove 2 screws for Vario Motor.

② Pull the Vario Motor and Micro S/W.



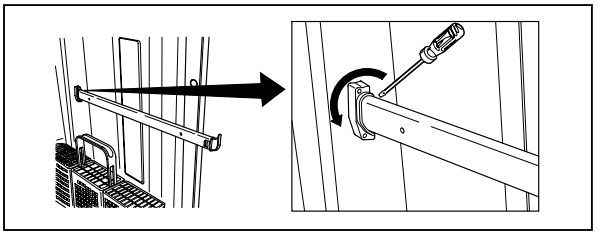
3) Soil Sensor

① Pull the Soil Sensor.



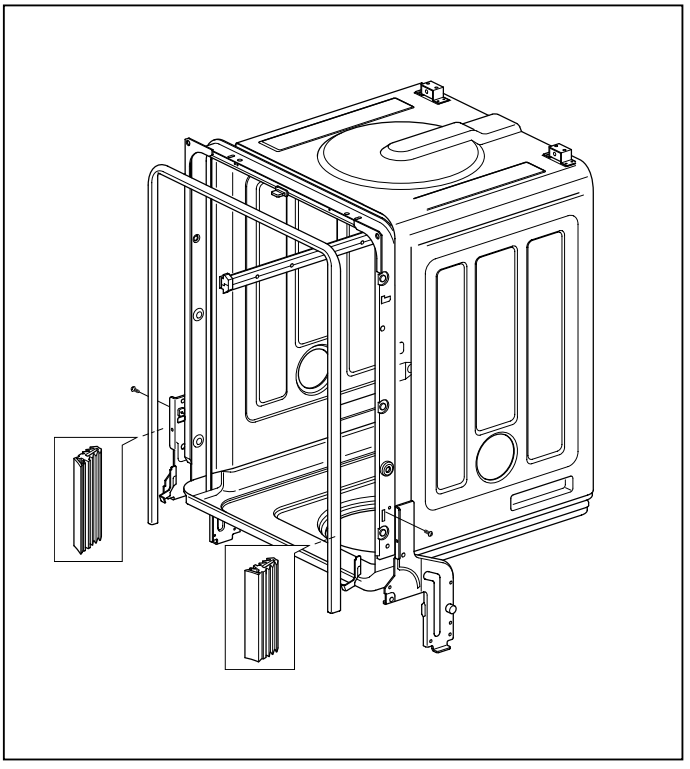
When you reassemble the Sump Assembly, be careful not to kink, tear and take off the seals.

15. Holder Supporter, Tub Packing and Hinge Supporter Assembly.



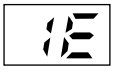
Rotate the screwdriver, after slide it into the gap between Stopper Roller and Rail Roller.

You must take off Stopper Roller(F117) by – screwdriver to change the Rail Assembly. (Stopper Roller could be broken while you are taking off. So you should be careful not to be hurt and have extra stopper rollers ready at servicing at all times)



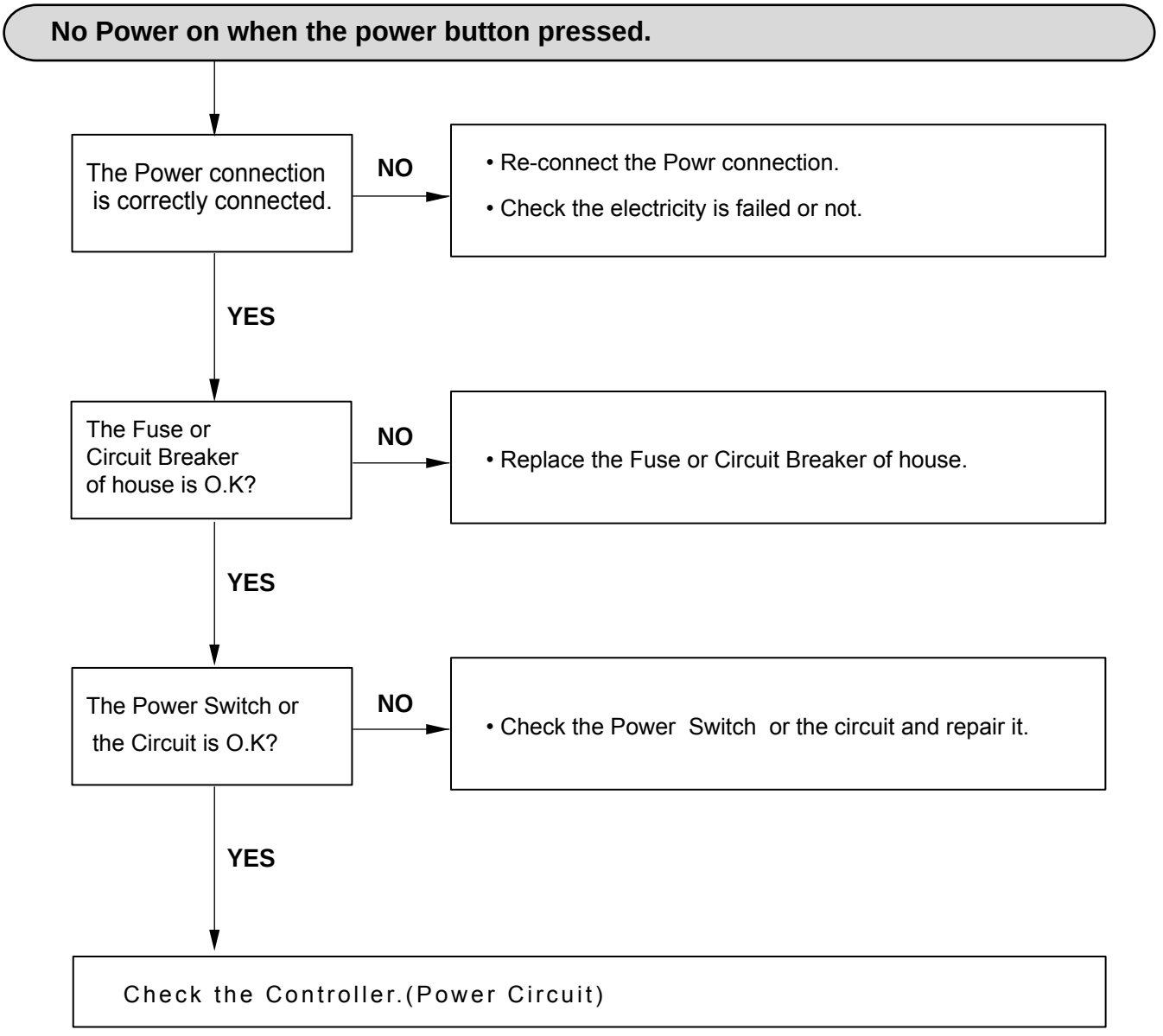
8.TROUBLE SHOOTING METHODS

A. TROUBLE SHOOTING ACCORDING TO DISPLAYED ERROR MESSAGE

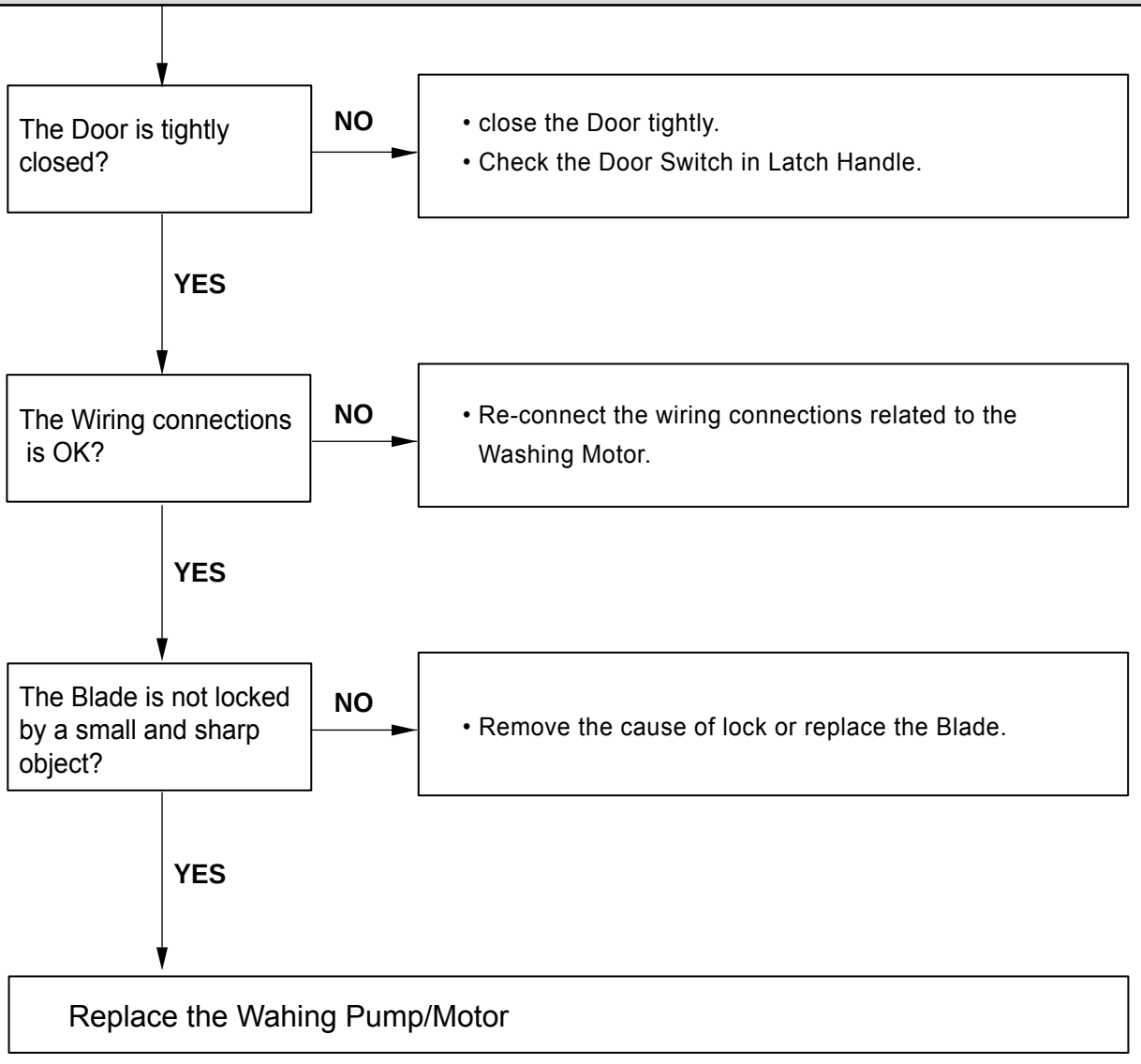
ERROR MESSAGE	POSSIBLE CAUSE FOR ERROR OCCURRENCE	REMEDY
INLET ERROR  displayed **Condition** Not reached to the normal water level in spite of 10 min. water supply	• The Water Supply Tap is closed. • The Water Supply is shut off. • The Inlet Hose is kinked. • The Water Pressure is very low. (below 10 psi) • Inlet Valve is OK? • The filter of Inlet Valve is clogged by impure water. • The Hall sensor is OK? • The Impeller of Air Guide is bound.	• Take action on Water Supply device. • Measure the electric resistance of Inlet Valve. (950-1300 Ω) • Clean the filter of Inlet Valve. • Check the frequency of Inlet Water by the Test Mode. • Replace the Air Braker.
DRAIN ERROR displayed **Condition** Not fully drained out in spite of 5 min. drain operation	• The Drain Hose kinked or blocked. • Wiring connection is OK? • The drain outlet of sump is blocked. • The Drain Pump/Motor or circuit is troubled.	• Remove the cause of kink or block. • Check the wiring connection. • Measure the electric resistance of Drain Motor. (20-40 Ω) • Replace the Drain Motor or repair the Circuit.
LEAKAGE ERROR displayed **Condition** The excessive RPM of Washing Motor happened during Wash cycle due to water leakage.	• Water leakage in Hose connections. • Water is leaked by damages. • The Motor Water Seal leakage of Sump assembly. • The height of Drain Hose connection (sink-Drain Hose) is not over 20″. • Impeller of the Washing Pump is worn away.	• Replace the connections of Hose. • Check the point of damages and repair or replace the related parts. • Read the Installation Instructions (page 9) and fix it to the recommended Height. • Replace the Impeller of the Washing Pump.

ERROR MESSAGE	POSSIBLE CAUSE FOR ERROR OCCURRENCE	REMEDY
EXCESS ERROR displayed **Condition** Excessive water is supplied than normal water level.(Automatically drain Pump operated.)	• The Inlet Valve is troubled. • The Controller is troubled.	• Replace the Inlet Valve. • Repair or replace the Controller.
THERMAL ERROR displayed **Condition** The resistance of thermistor not normally out put.	• The Inlet Water Temperature is very high. (over 194˚F) • Wiring connection is OK? • The Thermistor is OK?	Check the temperature. (Test Mode) 1) If the temperature is displayed, ① adjust the Inlet Water Temperature to 120˚F. 2) If the temperature is not displayed, ① check the wiring connection. ② check the electric resistance of Thermistor. (11~14kΩ at 77˚F) ③ Replace the PCB.
MOTOR ERROR displayed **Condition** The Motor is working abnormally.	• Wiring connection is OK? • The Impeller of Washing Pump is locked. • The rotor of Washing Motor is locked. • The Blade is locked.	• Check the wiring connection. • Replace the cause of restriction. • Replace the Washing Motor. • Replace the PCB.
HEATER ERROR displayed **Condition** The water is not heated or the temperature in the Tub is overheated to over 194ßF	• The Circuit of Heater is troubled. • The Thermistor is troubled. • The Heater is shorted. • The Relay Circuit is troubled.	• Repair the Circuit of Heater. • Replace the Thermistor. • Replace the Heater. • Repair the Relay Circuit..

B. TROUBLE DIAGNOSES AND REPAIR BY SYMPTOM



The Wash Pump/Motor does not run.



Washing Results are not Satisfactory

After washing, are there still White deposits or streaks on the dishes?

YES

- Reduce the amount of Rinse-Aid (for Streak)

NO

After washing, are there still food soils on the dishes?

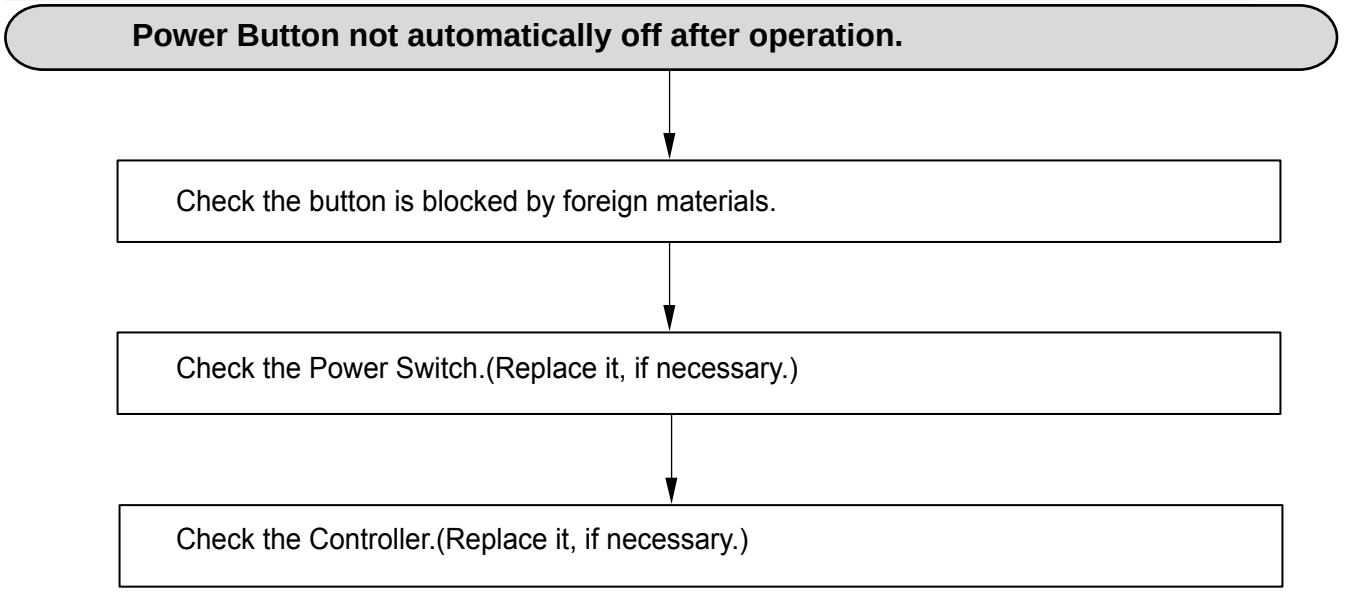
YES

Check that :
- the amount of detergent Correctly used or not
- Filters clogged or not.
- the holes of spray arms blocked or not.
- Utensils are correctly arranged or not.
- Utensils are overloaded or not.
- the spray arm rotating is obstructed or not.
- the program is correctly selected or not.

Dry Results are not satisfactory

Increase the amount of Rinse-Aid.(Set the number higher)

Select the Program that the Rinse temperature is higher.


Power Button not automatically off after operation.
Check the button is blocked by foreign materials.
Check the Power Switch.(Replace it, if necessary.)
Check the Controller.(Replace it, if necessary.)

9. INSTALLATION INSTRUCTION

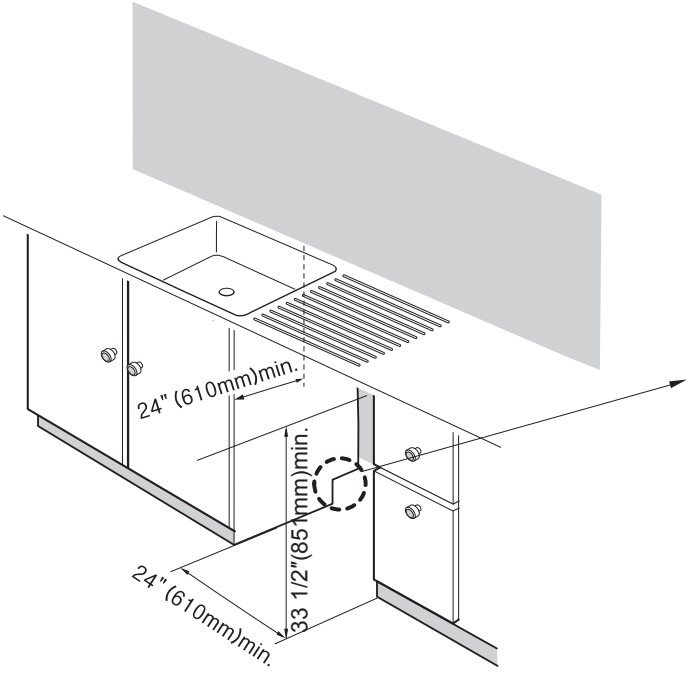
Step 1: PREPARE CUPBOARD OPENING

1. This dishwasher is designed to fit a standard dishwasher opening as shown below.

2. Select a location as close to sink as possible for easy connections to water and drain lines.

3. The dishwasher should not be installed more than 10 ft. (3m) from the sink for proper drainage.

4. If dishwasher is to be installed in a corner, a minimum of 2 in. (50mm) is required between the dishwasher and an adjacent a wall.



If dishwasher will sit directly on subflooring, subfloor should be sealed with a waterproof paint or sealer to prevent damage from steam.

Drill a 1-1/2″ (38mm) dia hole or cut out for drain hose, inlet hose and electrical cables on either side.

approx. 4″(100mm, W) X 4″(100mm, H)

These openings must be within 4″ (100mm) from the floor and 1-5/8″ (40mm) from the back wall. If there is a floor in the cabinet under the sink, it will also be necessary to drill or cut through the floor to connect the water and drain under the sink.

■ Ensure the floor under the dishwasher is at the same level as the rest of the room to allow for any service requirements.

Step 2: PREPARE THE ELECTRICAL WIRING

⚠ WARNING

For personal safety, remove house fuse or open circuit breaker before installation.
Do not use an extension cord or adapter plug with this dishwasher.
Electrical and grounding connections must comply with the national electrical code/provincial and municipal code and/or other local codes.

1. This appliance must be operated with correct voltage as shown in this manual and on the rating plate, and connected to an individual, properly grounded branch circuit, protected by time delay fuse. Wiring must be 3 wires including ground.
2. The wiring or cord should be in an accessible location adjacent to, and not behind the dishwasher and within 4 ft. (1.2m) of the dishwasher side.
3. The wiring or cord must be grounded properly, if in doubt, have it checked by a qualified electrician. No other appliance shall be connected to the same outlet by a double adapter or similar plug.
4. The wiring or cord must be oriented as shown in Figure A below.
5. Check the dishwasher for any damage before trying to install it.
6. Make sure water line and Electrical line are oriented in the bottom channels as shown in the figure below.
   If you find any damage to the dishwasher, Please contact your dealer or builder immediately.

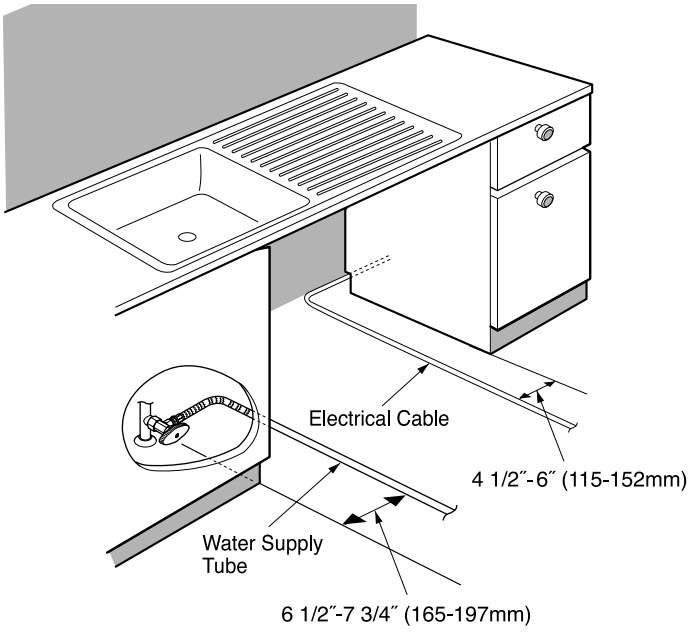


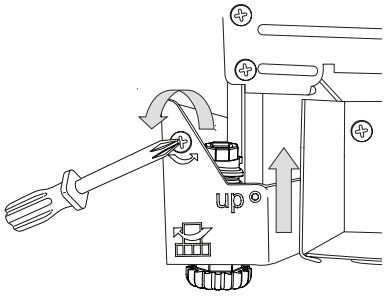
Figure A

Step 3: PREPARE THE WATER SUPPLY CONNECTION

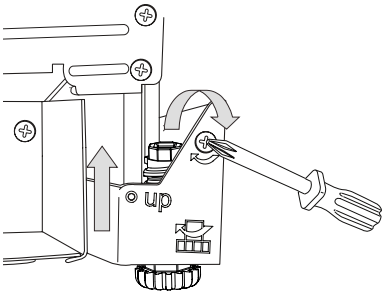
1. This dishwasher may be connected to either hot or cold water. If the water can not be maintained below 149°F (65℃), the dishwasher must be connected to cold water.
2. When connecting the dishwasher water line, sealing tape or compound should be used to avoid leaks.
3. When connecting the dishwasher water line, the house supply should be shut off.
4. The Water Supply Tube must be oriented as shown in Figure A on page 6.

Step 4: PREPARE DISHWASHER FOR INSTALLATION

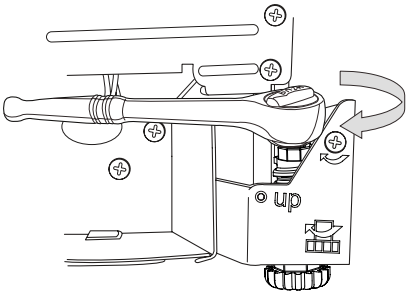
1. Adjust the legs to the required height to fit properly under the countertop as shown below.
2. Check the level of dishwasher by using level.



■ Left side – turn the adjusting screw counterclockwise to lower the leg and raise the rear of the dishwasher.



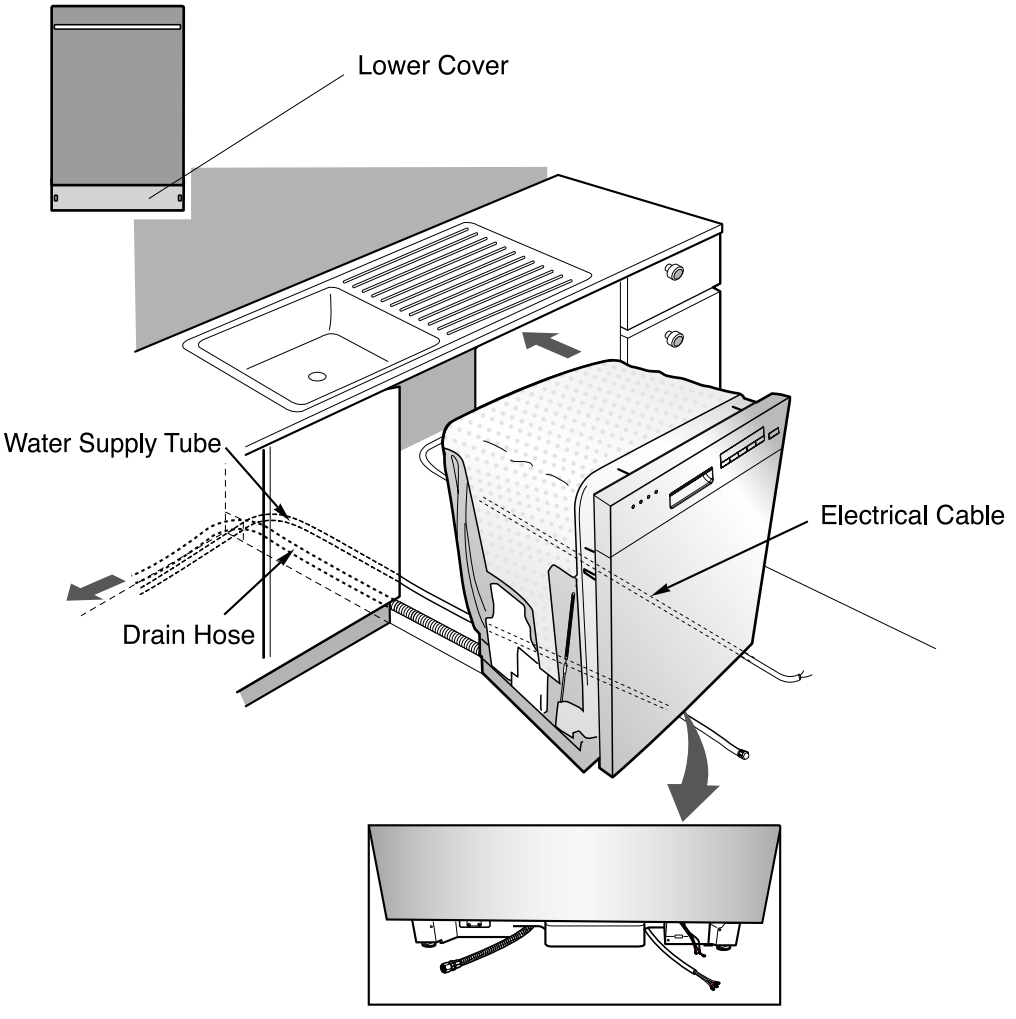
■ Right side – turn the adjusting screw clockwise to lower the leg and raise the rear of the dishwasher.



■ Front feet can be adjusted from the top using a 1/4″ square drive wrench.

Step 5: INSTALL THE DISHWASHER IN CUPBOARD

1. Remove the Lower Cover and orient dishwasher as shown below.
2. Before sliding the dishwasher into the cupboard opening, make all necessary height adjustments using the legs.
3. Slide the dishwasher into the cabinet opening carefully. Make sure that the drain hose inside the cabinet is not kinked.
4. Follow the instruction as in Figure B.



Step 6: DRAIN LINE CONNECTION

1. If the end of the drain hose does not fit to the drain line, use an adapter (not supplied) that must be resistant to heat and detergent and may be obtained from a plumbing shop.

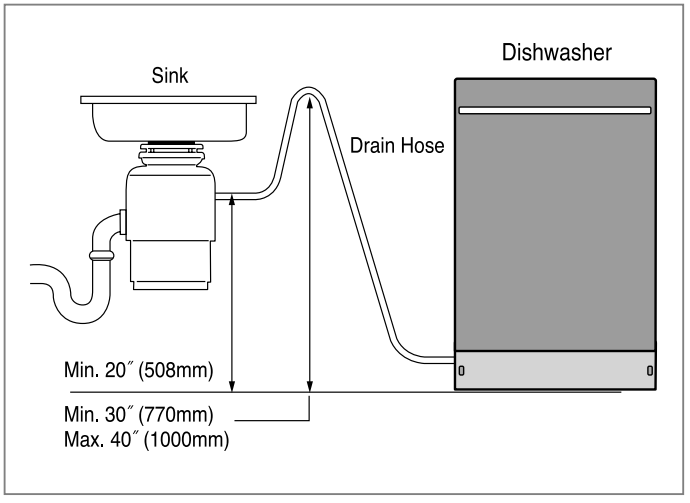
2. There are 2 typical connections as shown in Figures C & D.

   ① There may be other options than shown here for connection the drain hose. The drain connection must meet local plumbing regulations.

   ② The S trap spigot must be drilled out cleanly and free of obstruction to its maximum internal diameter, if used for drainage.

   ③ To prevent syphoning, one of the following instruction methods must be followed:

Figure C: Connection to Disposer or waste Tee.



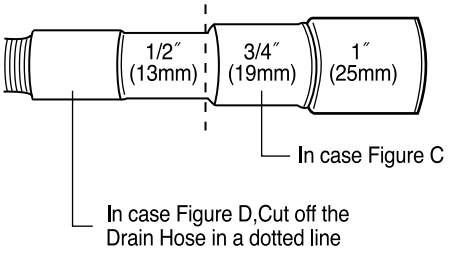
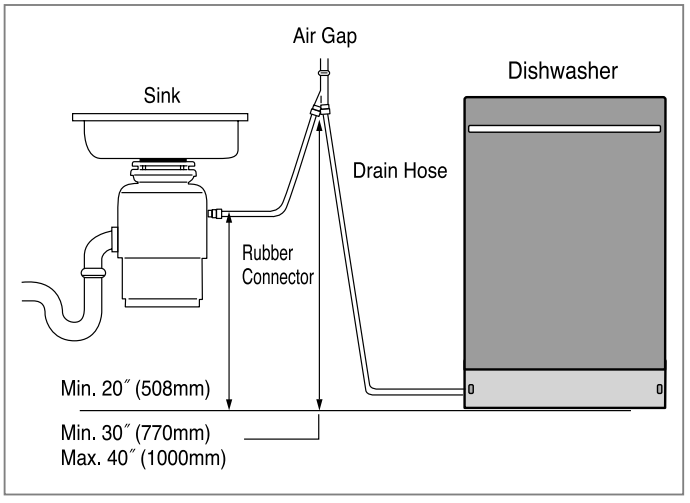


Figure D: Connection to Air Gap.

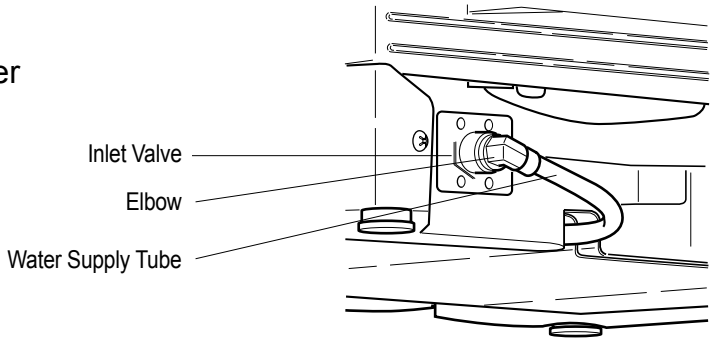


Drain Requirements

- Follow local codes and ordinances.
- Do not exceed 10 ft. (3m) distance to drain.
- Do not connect drain lines from other devices to the dishwasher drain hose.

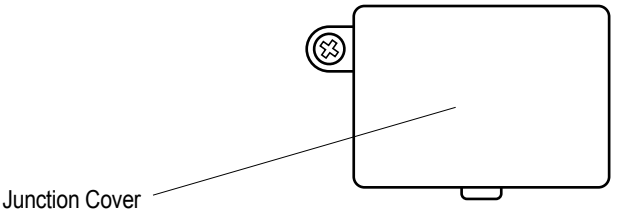
Step 7: WATER SUPPLY CONNECTION

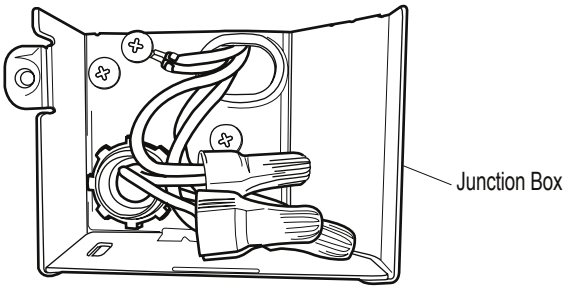
1. When connecting, sealing tape or sealing compound should be used to avoid water leaks.
2. Before connecting, turn off the water supply.
3. After fitting the Elbow into the Inlet Valve, slide the Flexible Stainless Tube or Copper Tube into the Elbow.
4. Tighten the nut and make sure that the line is not kinked or sharply bent.



Step 8: ELECTRICAL POWER CONNECTION

1. Before beginning, turn off electrical power to the unit at the circuit breaker.
2. Remove the Junction Cover and then Install the Strain Relief.
3. Twist Wire Connectors tightly on the wires. Wrap each connection with Electrical tape.
4. Check again and make sure that all wires are connected correctly, black to black, white to white, green to green (ground to ground).
5. Replace the Junction Cover.

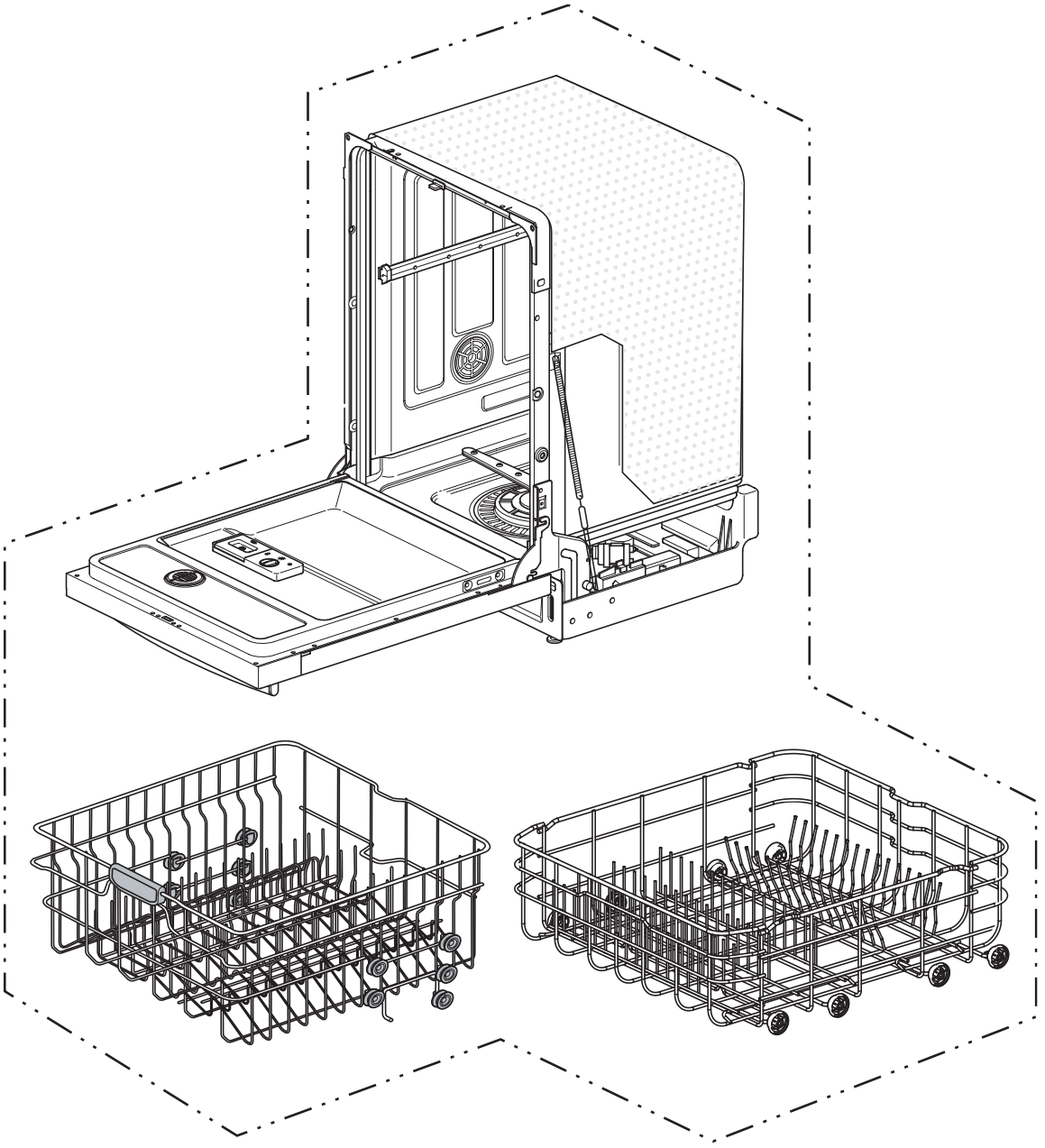




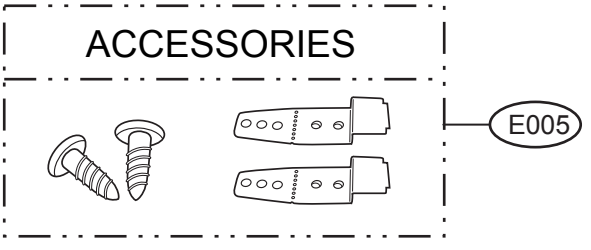
Step 9: FINAL CHECKS

1. Turn electrical power back on at the circuit breaker.
2. Turn house water supply back on.
3. Operate the dishwasher through one cycle (Quick cycle is recommended) to check for water leaks and operating conditions.
4. Replace the Lower Cover.

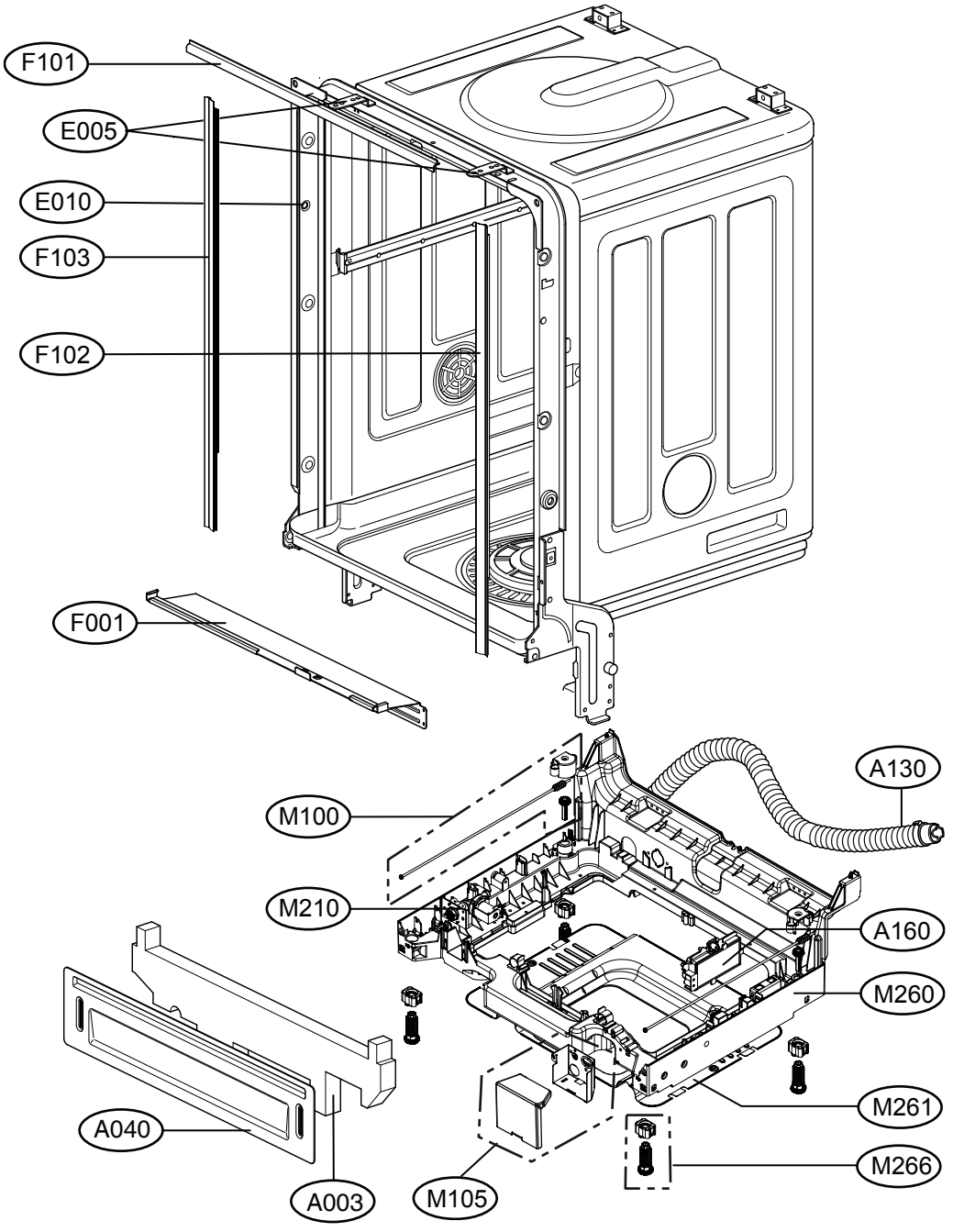
10. EXPLODED VIEW



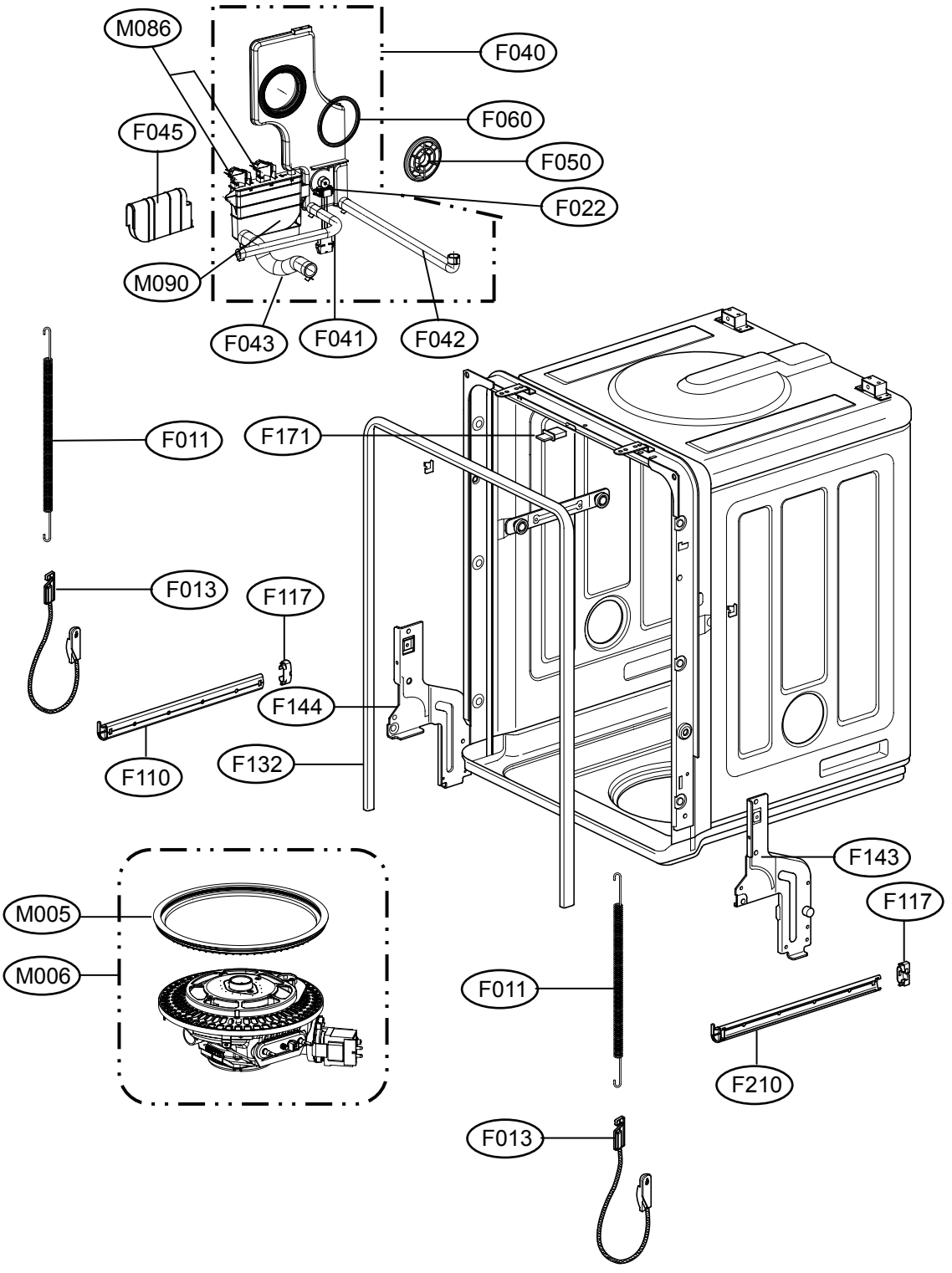
"The following parts are not illustrated"		
	Description	**Loc No.**
Printed materials	*Owner's Manual	G001
	*Energy Label	G002
	*Service Manual	G004



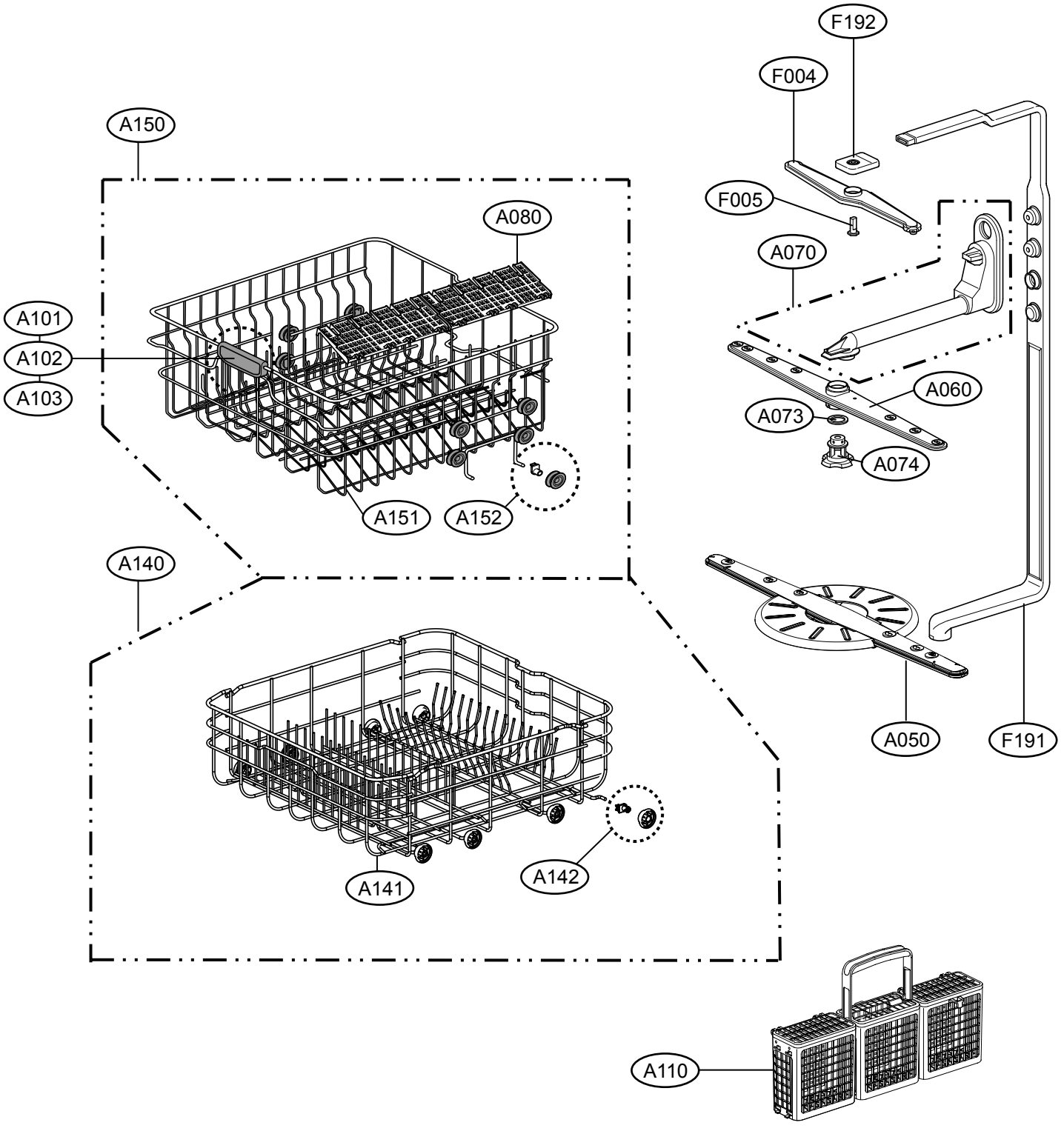
EXPLODED VIEW



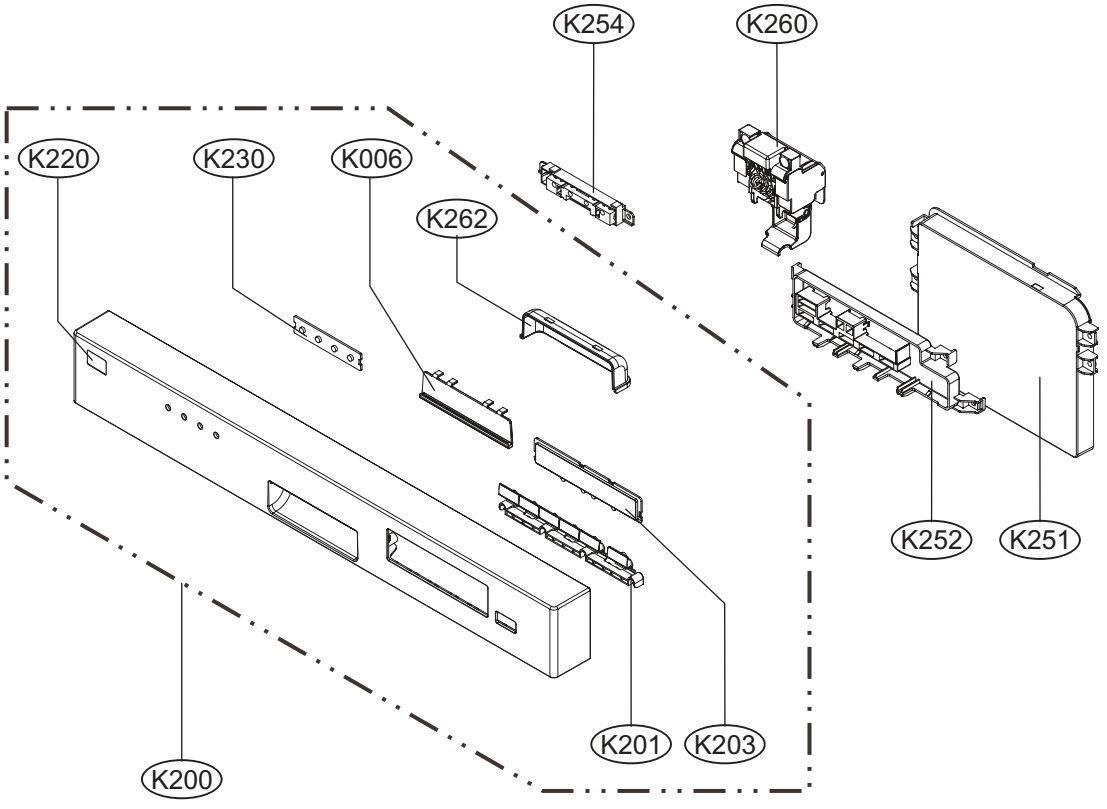
EXPLODED VIEW - TUB ASSEMBLY



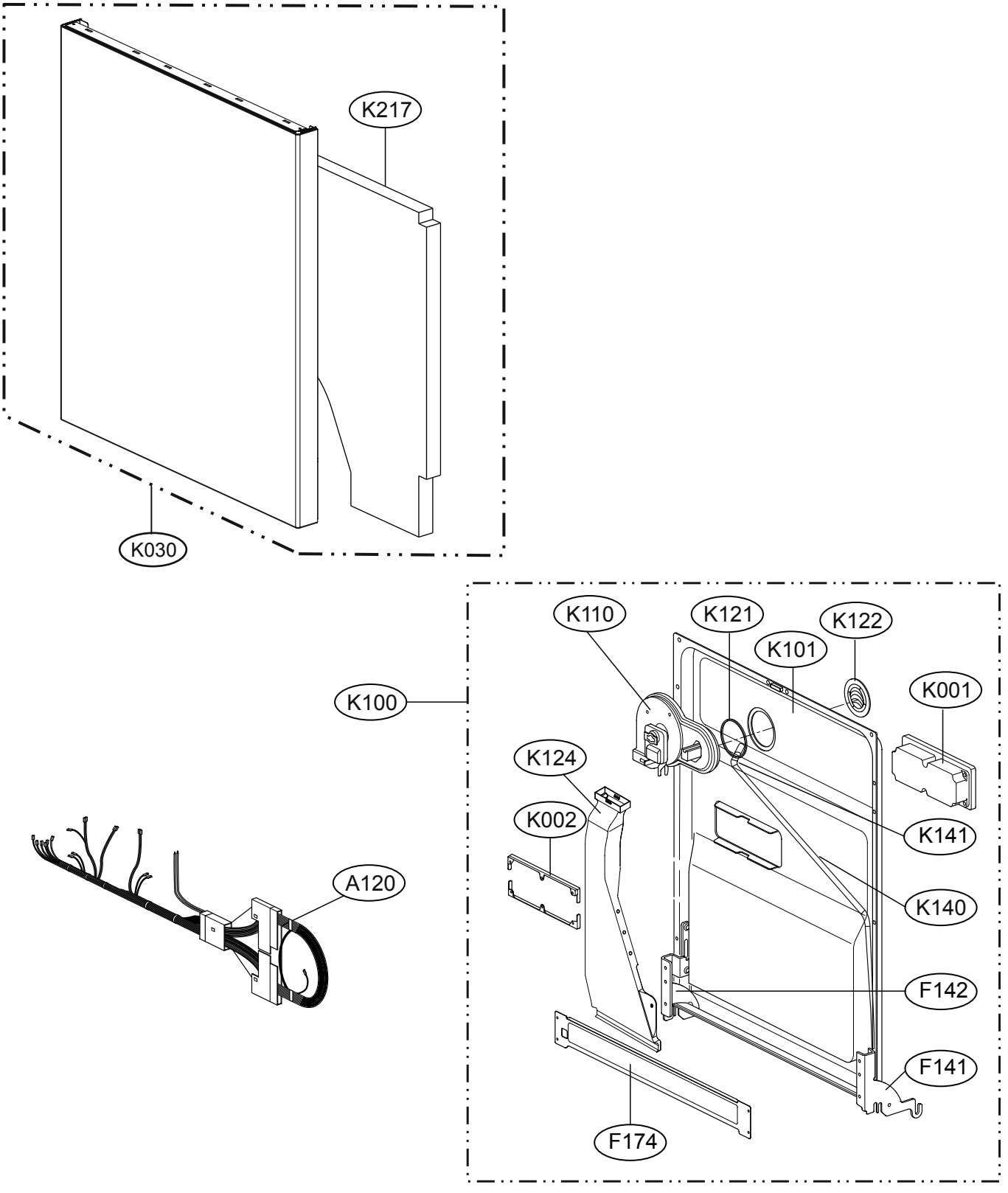
EXPLODED VIEW - RACK ASSEMBLY



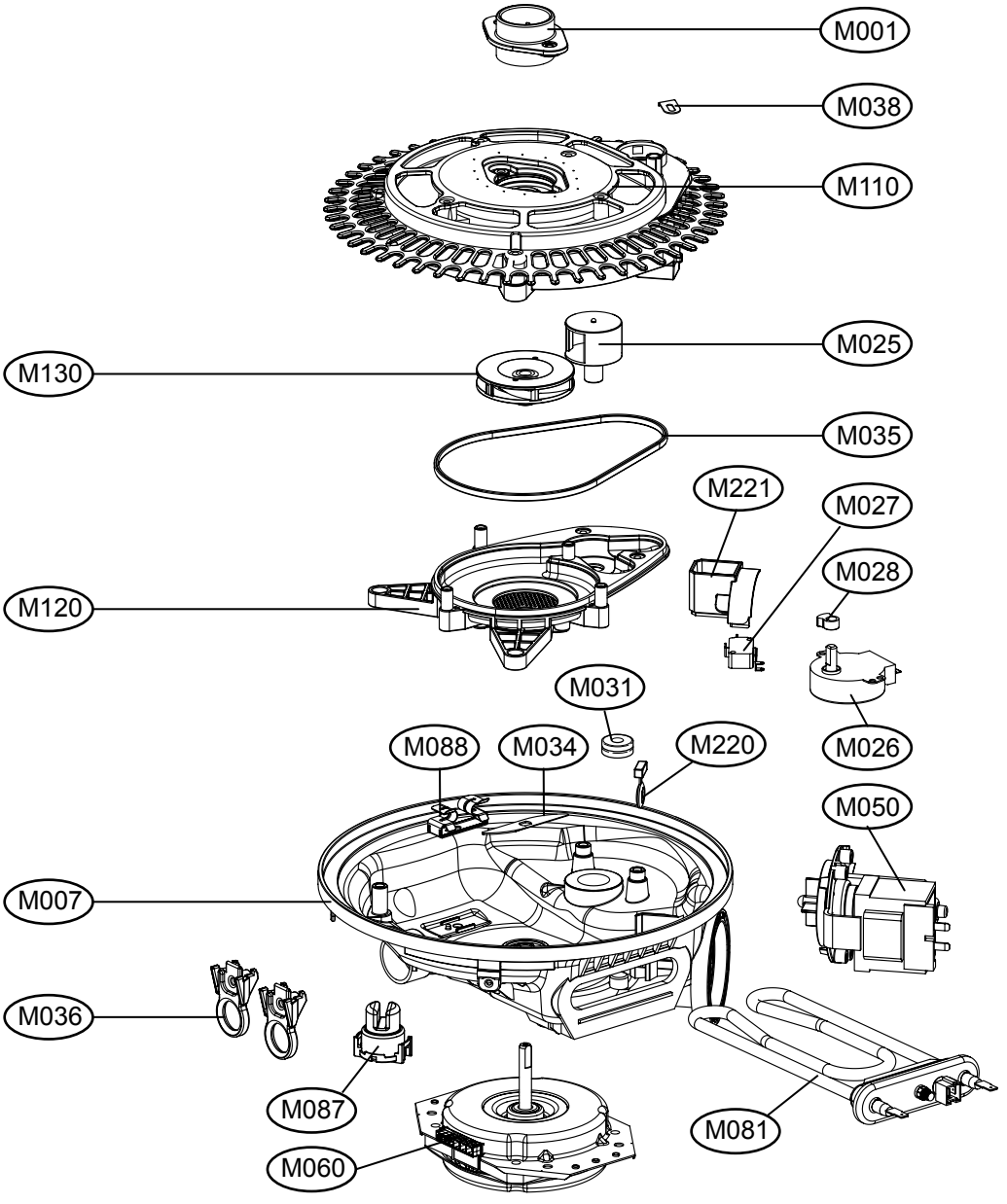
EXPLODED VIEW - PANEL ASSEMBLY



EXPLODED VIEW - DOOR ASSEMBLY



EXPLODED VIEW - SUMP ASSEMBLY



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MEMO

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